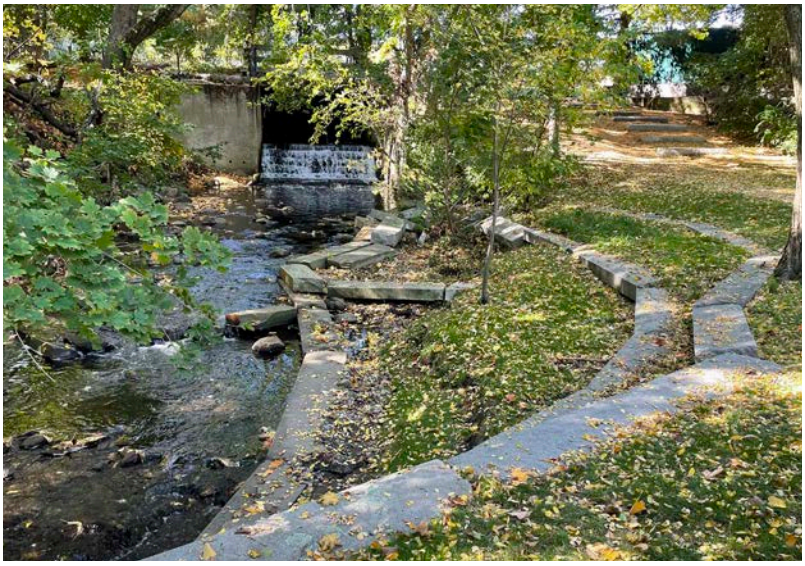
Cooke's Hollow

Feasibility Study and Preliminary Design Report

Arlington, Massachusetts

August 2023



Prepared by:

HATCH

TABLE OF CONTENTS

1. PROJECT OVERVIEW, GOALS AND DELIVERABLES

PROJECT OVERVIEW

I. Data Gathering:

Evaluate exis c and site analysis data to iden y poten es for improvements with emphasis on ecological integrity and climate resilience.

II. Community Engagement

Engage community stakeholders to solicit feedback throughout the design process to inform preliminary design goals, es and concept designs.

III. Feasibility Study and Preliminary Design

Use data and stakeholder feedback to iden y and propose conceptual design

PROJECT GOALS

1. Improve park and universal accessibility.
2. Enhance park
3. Maintain historic park character.
3. Improve perimeter and sight lines.
4. Preserve natural feel/sense of place.
4. Unify of site furnishings.
5. Address dominant invasive tree canopy.
6. Add and improve wildlife habitat.
7. Evaluate for green infrastructure to the of and climate change.

PROJECT DELIVERABLES

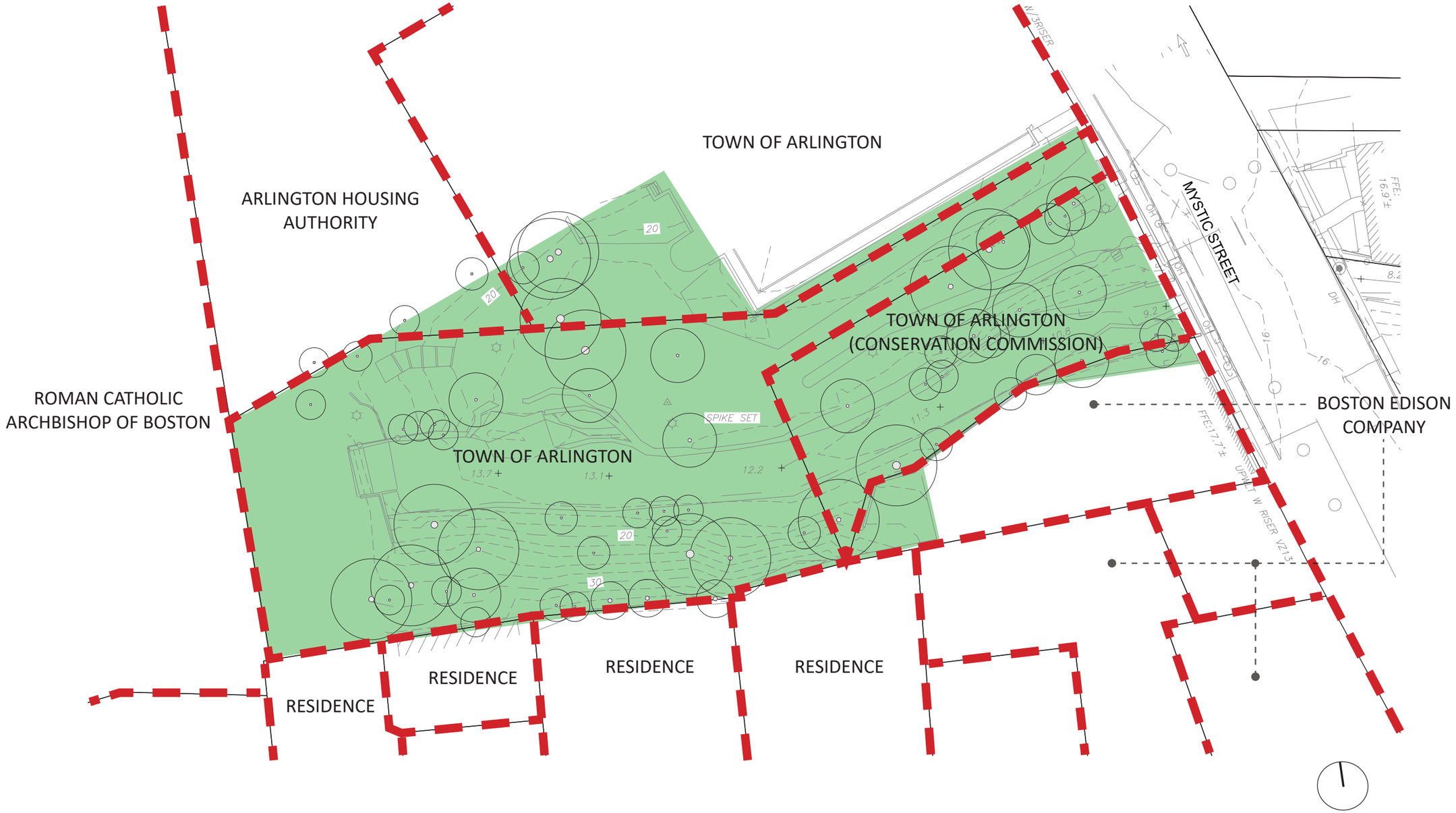
- (3) Public Engagement Forums
- (2) Concept Alterna e Plans with Cost Es tes
- Final Report of all combined project materials

2. EXISTING CONDITIONS AND SITE ANALYSIS

*See Appendix A- Public Presenta forma egarding:

Exis egeta
Na e Vegeta
Invasive Vegeta

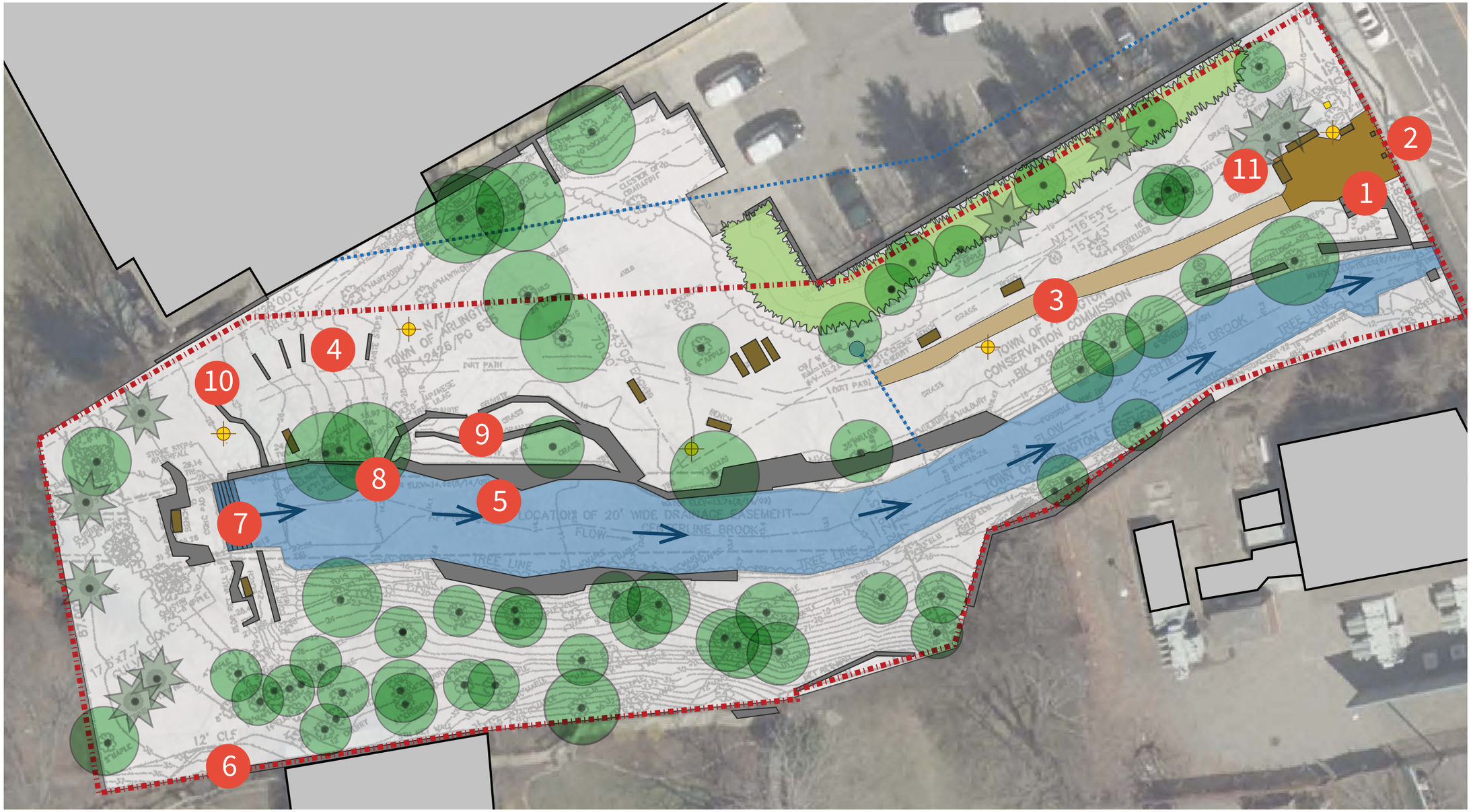
PROPERTY LINE PLAN



SITE CONTEXT PLAN

EXISTING CONDITIONS PLAN

EXISTING CONDITIONS PHOTOS



EXISTING CONDITIONS

1 Dedication Plaque

2 Granite Piers and Brick Paving at Entrance

3 Stone Dust Path & Benches

4 Eroding Slope Steps Towards Ball Field

5 Stacked Granite Curb Retaining Edge

6 Chain Link Fence with Barbed Wire Adjacent to Ball Field

7 View of the Falls from the Bank

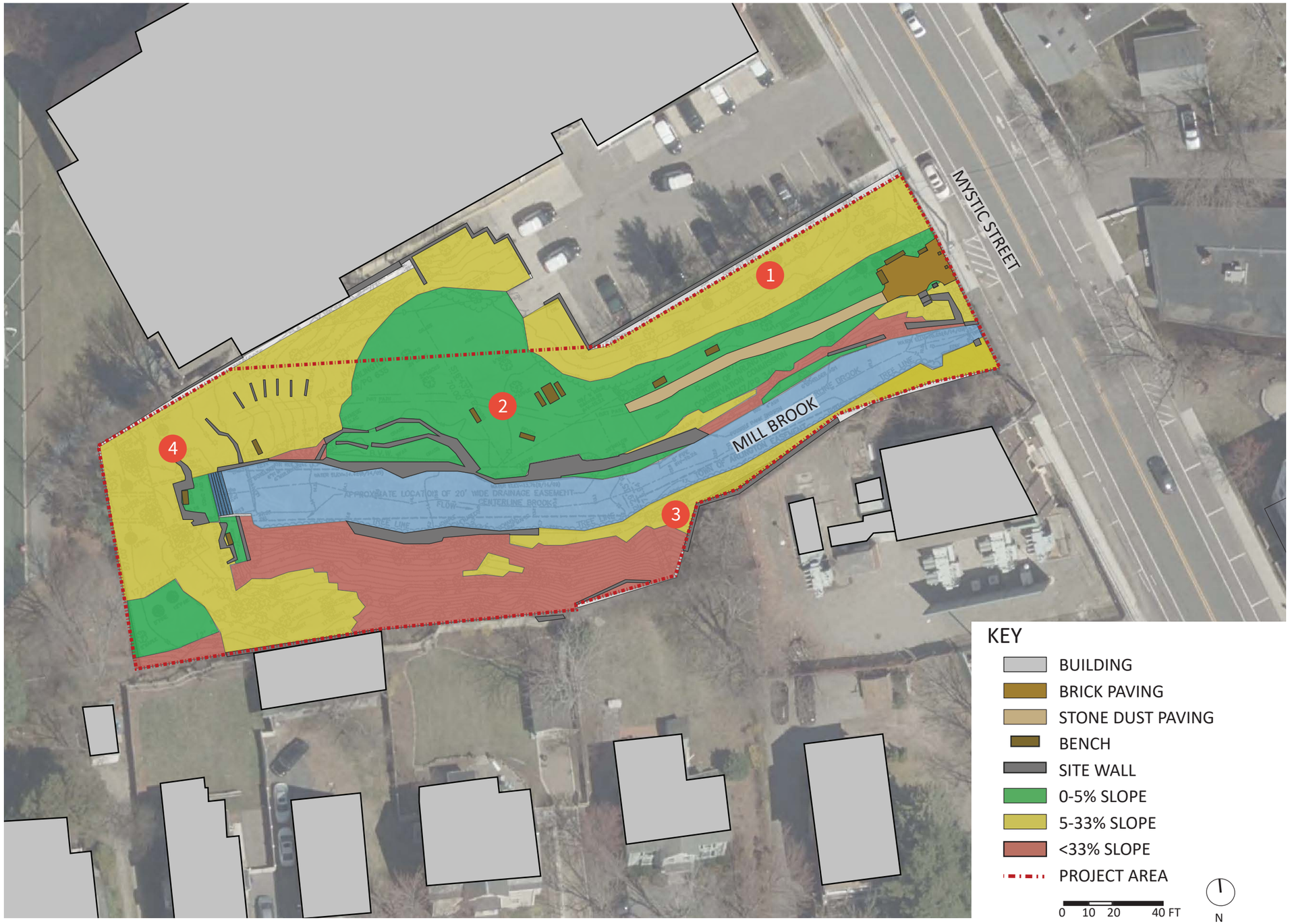
8 Failing Granite Curb Edge

9 Granite Curb Retaining Edge

10 View Towards Mystic Street at the Top of the Slope

11 Granite Bench at Mystic Street Park Entrance

SITE SLOPE PLAN



SLOPE

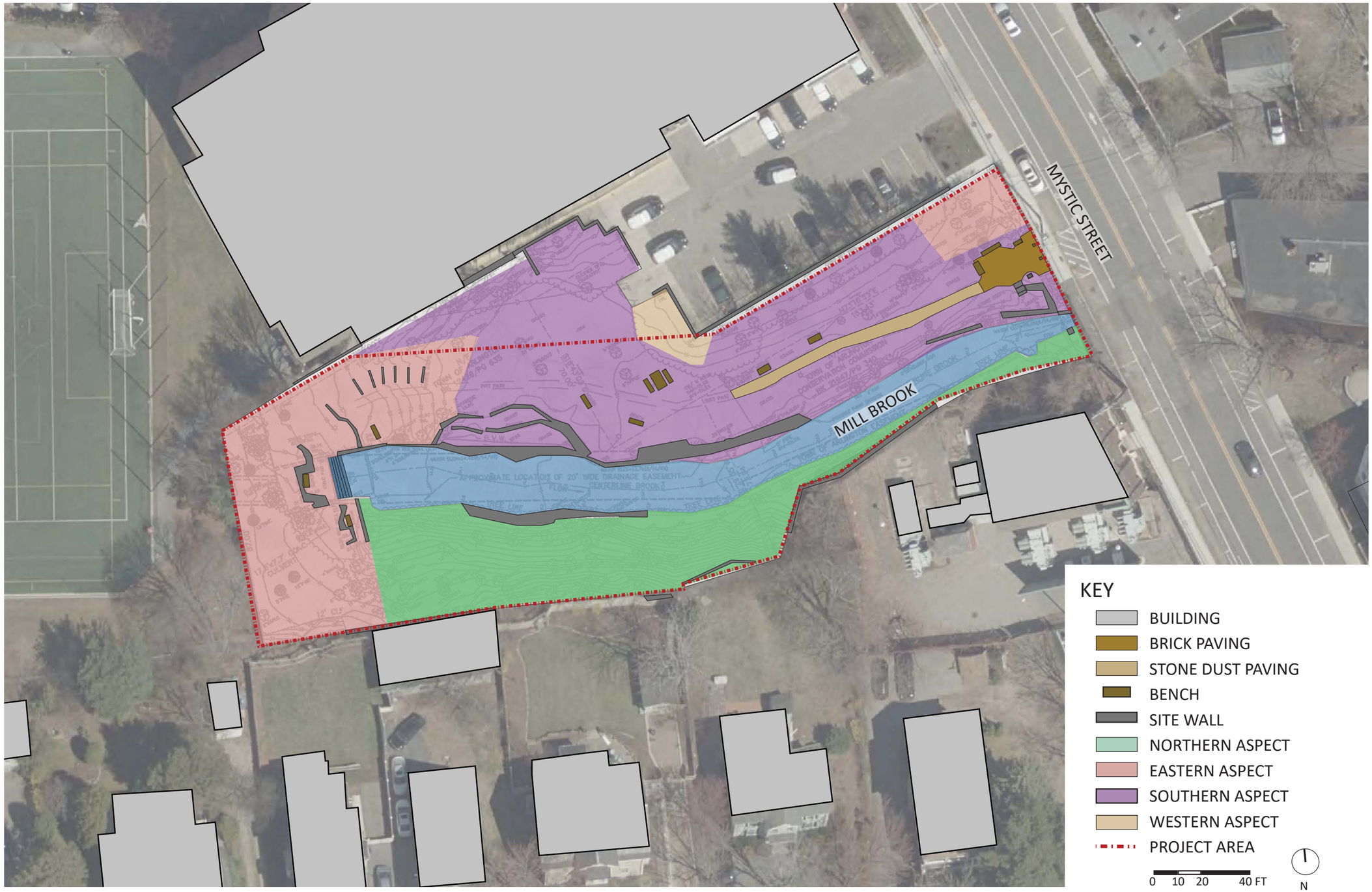
1 Vegetated Buffer Along Police Station Parking Lot Edge

2 Stacked Granite Retaining Edge Along the Main Path

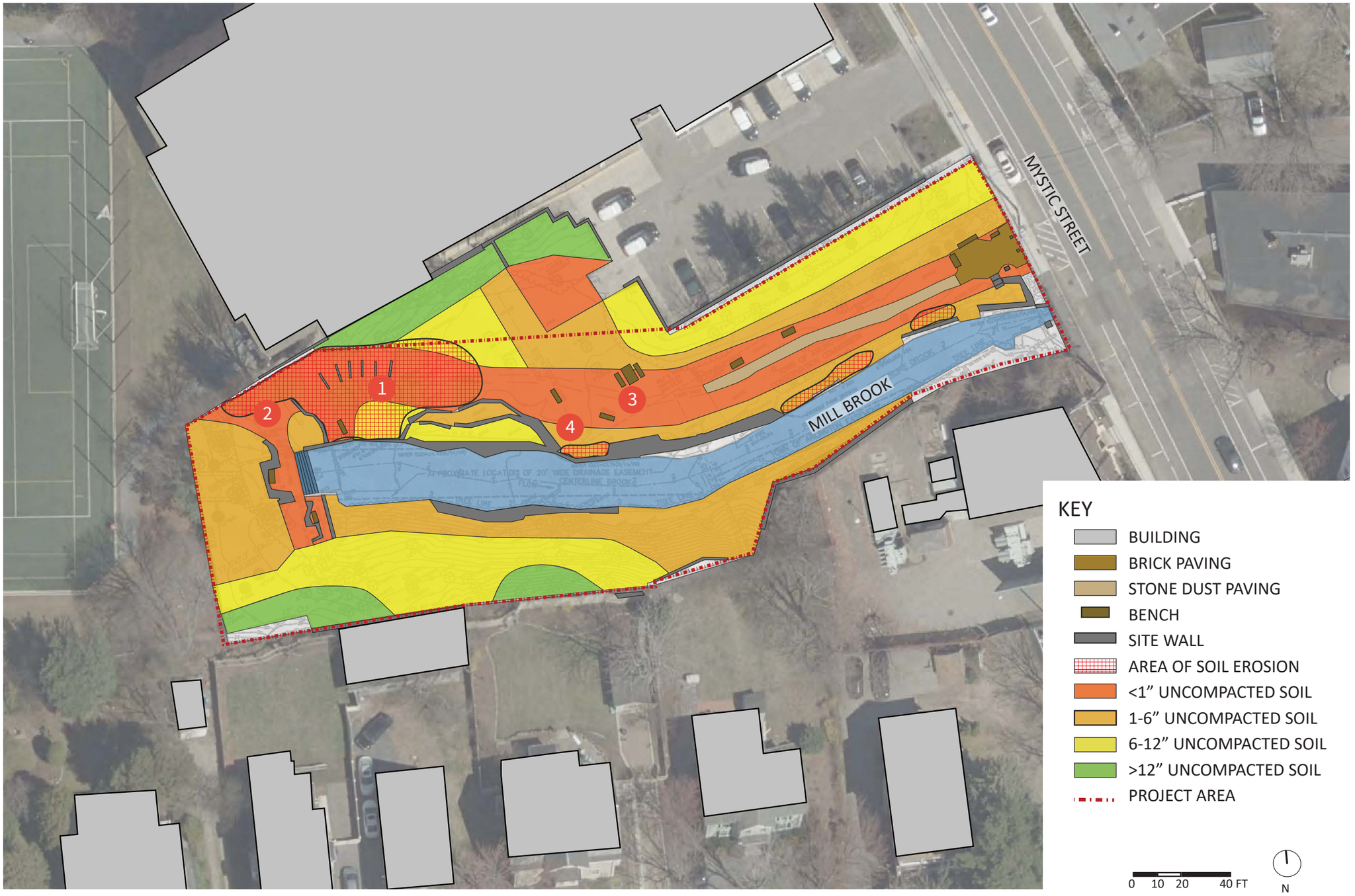
3 Eroding Conditions on the Southern Slope

4 View East from the Upper Landing at Top of the Falls

SLOPE ASPECT PLAN



SOIL COMPACTION AND EROSION PLAN



SOIL COMPACTION AND EROSION

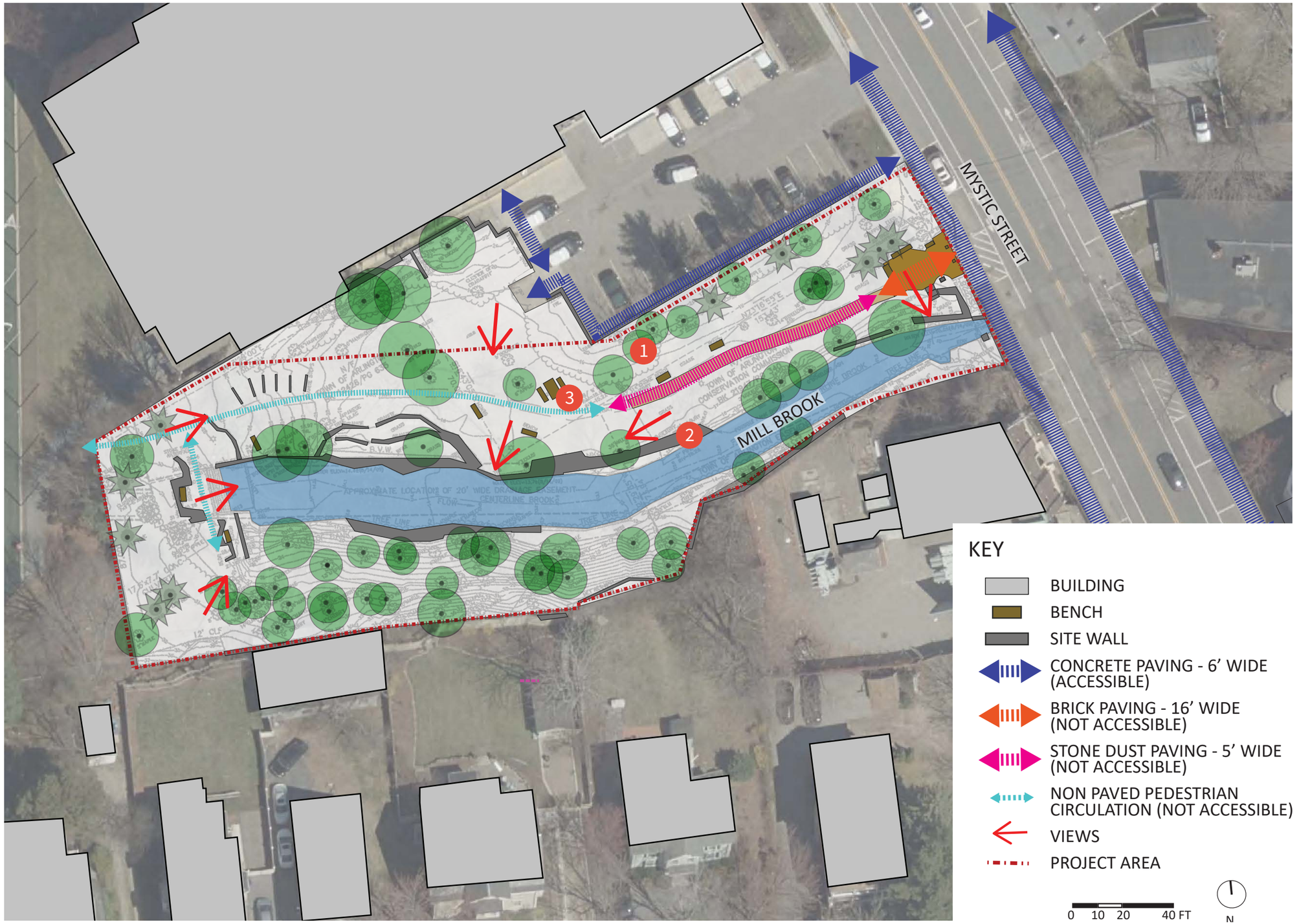
1 Soil Loss from Erosion at Granite Step Treads

2 Compacted Gravel Slope at Top of Stairs

3 Stormwater Runoff Ponding on Compacted Stone Dust Path Surface

4 Slumping Soil Erosion Behind Granite Curb Edge Near Falls

SURFACE HYDROLOGY PLAN



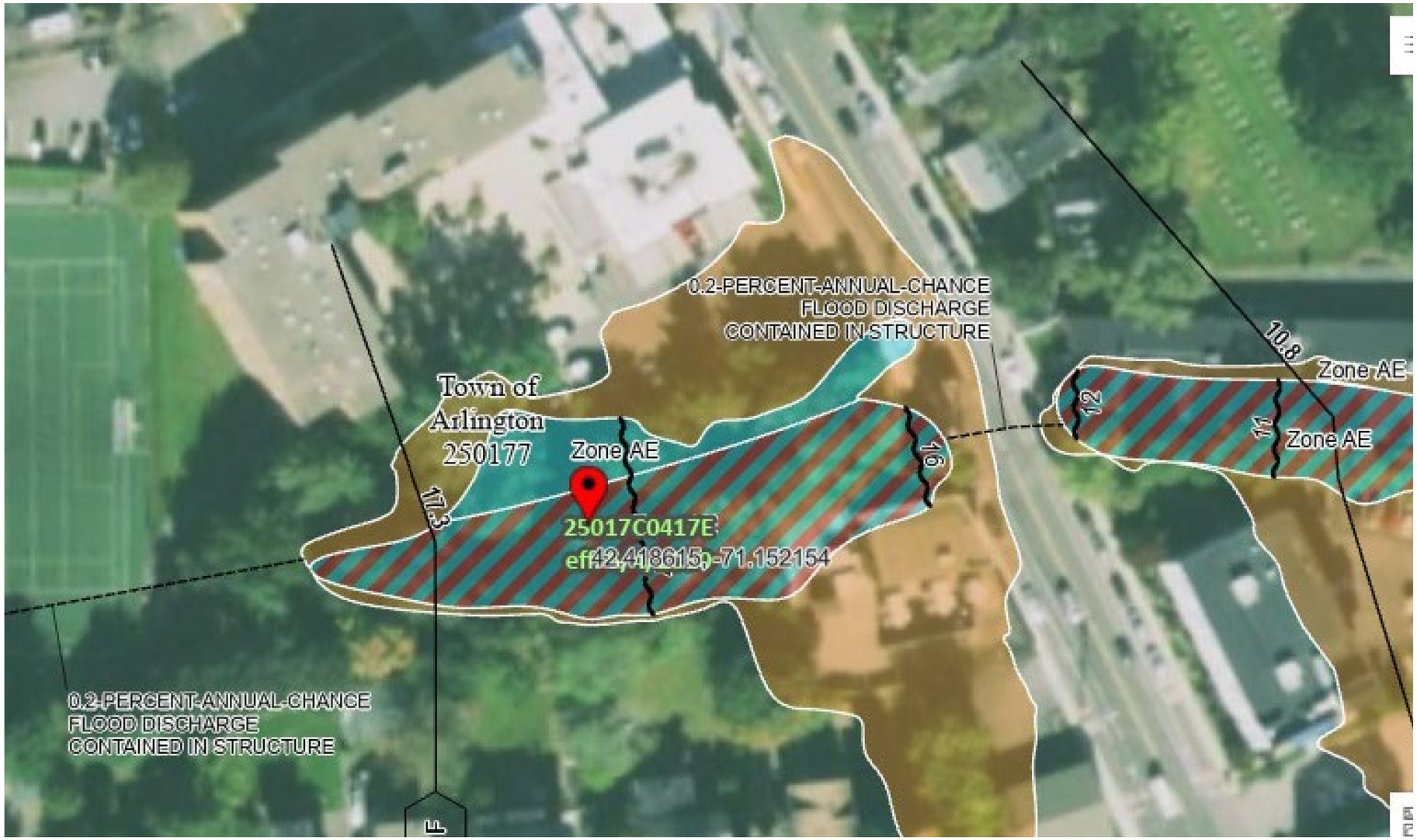
SURFACE HYDROLOGY

1 Catch Basin Directing Stormwater Runoff Directly to Mill Brook

2 Catch Basin Outfall to Mill Brook in Stacked Granite Curb Edge

3 Stormwater Surface Runoff Not Being Directed to Swale

FEMA FLOOD PLAN



Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN — Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 — Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

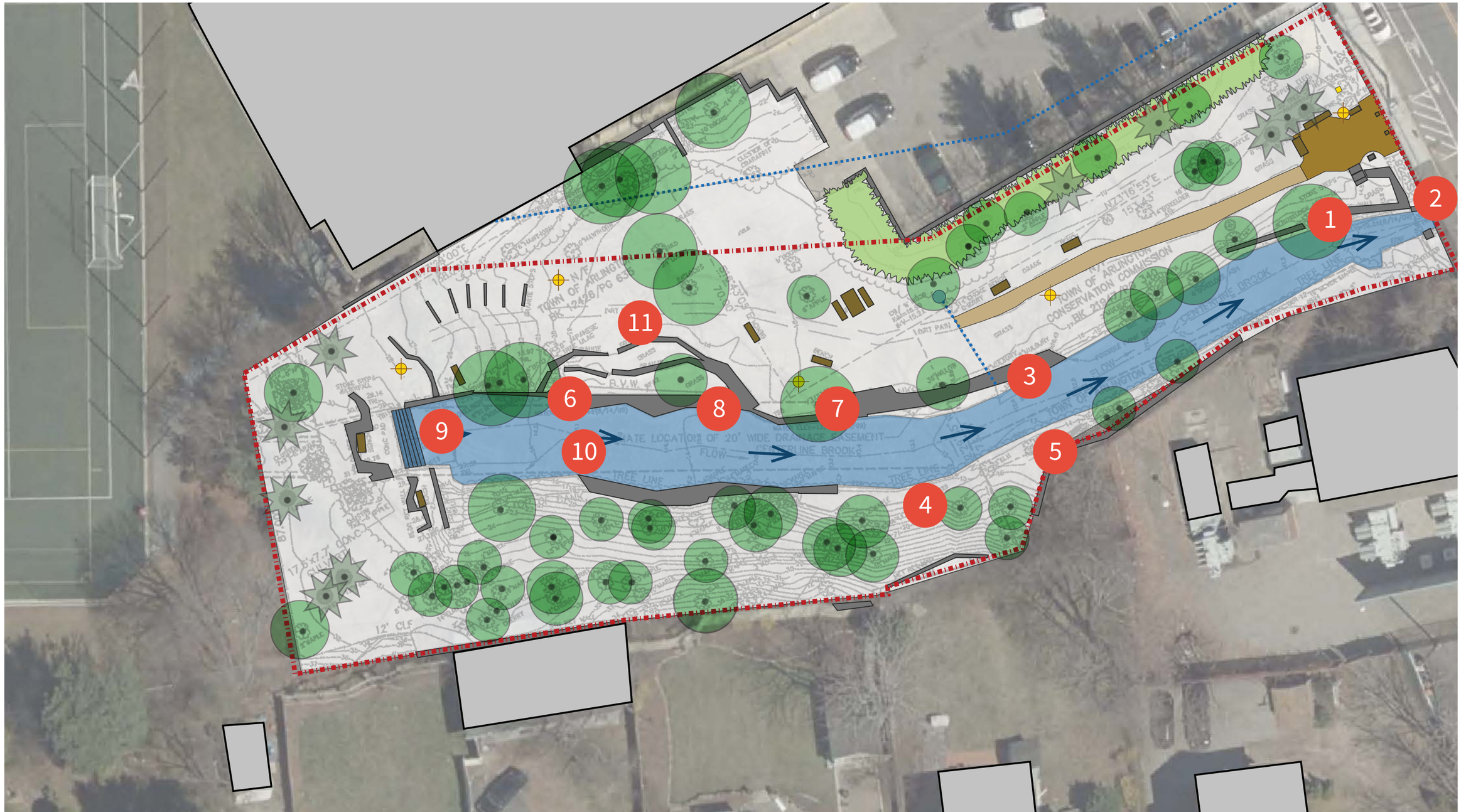
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 7/10/2023 at 12:03 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

SHORELINE CONDITION PLAN



SHORELINE CONDITION

1 Boulder Edge Near Mystic Bridge

2 Boulder Edge Transitions to Concrete Abutment at Mystic Bridge

3 Stacked Granite Curb Edge (Looking Down Stream)

4 Norway Maple Dominated Southern Bank

5 Natural Edge Southern Side

6 Stacked Granite Curb Armored Bank (North Side Near Falls)

7 Stacked Granite Curb Armored Bank

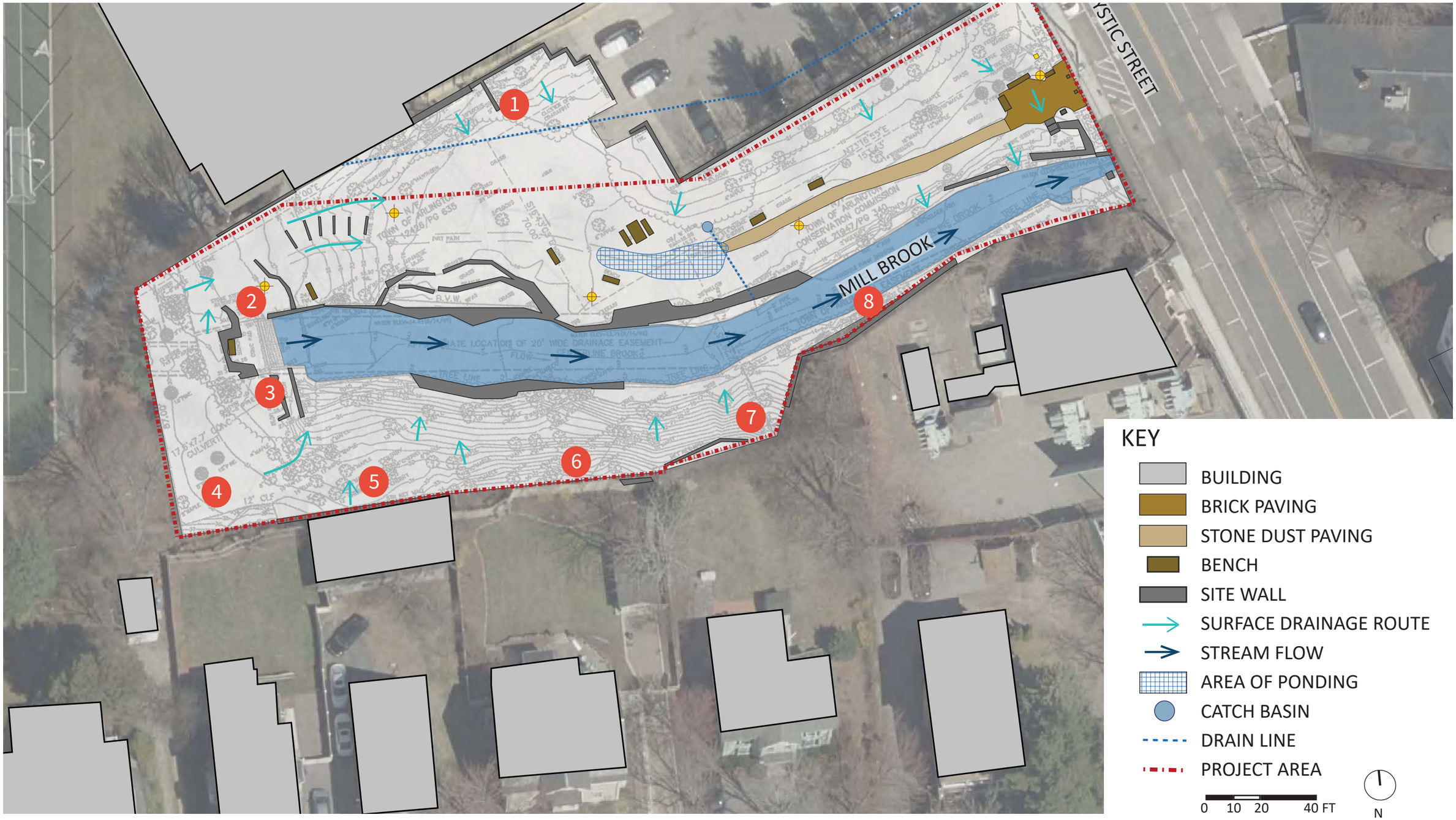
8 Failing Granite Curb Edge (North Side Near Falls)

9 Falls During Normal Flow

10 Falls During Moderate Flooding Conditions

11 Surface Runoff Collecting on Stone Dust Pathway

SITE FENCING AND EDGE CONDITIONS PLAN



FENCE CONDITION

1 Cusack Terrace Retaining Wall Edge

2 Unsafe Steel and Wood Guardrail Above Falls

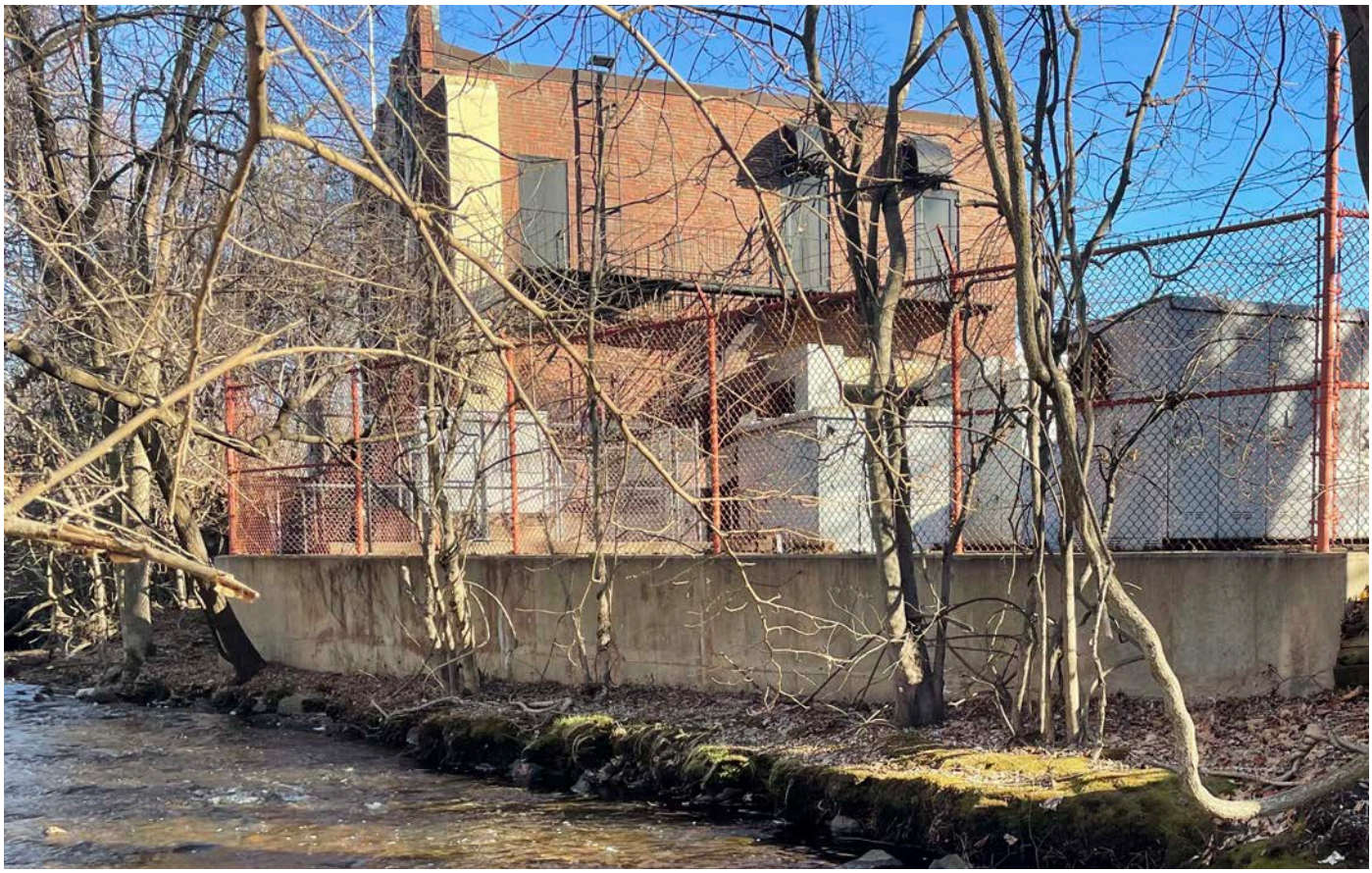
3 4’ Black Vinyl Chain Link Fence Along Wall Above Falls

4 Chain Link Fence with Barbed Wire (Southern Edge at Ball Field)

5 Stone Retaining Wall (Southwest Corner of Site Above Slope)

6 Wood Privacy Fence (Along Southern Top of Slope Edge)

7 6’ Chain Link Fence (Along Southern Top of Slope Edge)



8 Retaining Wall and Chain Link Fence with Barbed Wire at Eversource

SITE FURNISHING PLAN

SITE FURNISHINGS

1 Granite Slab Benches

2 Composite Wood and Metal Bench at Mystic Street Entrance

3 Globe Light Pole Fixture

4 Granite Slab Bench Above Stairs

5 Wooden Path Bench

6 Picnic Table

7 Granite Slab Bench Above Falls

TREE ASSESSMENT OVERVIEW

Executive Summary

Hatch performed an inventory and assessment of all trees >6" diameter at breast height (DBH). A total of sixty eight (68) exis trees within the Cooke's Hollow project site were evaluated. Hatch conducted a (Level 2) 360-degree ground-based visual of the crown, trunk, e, above ground roots, and site c around the tree in rela to targets. Informa gathered during this assessment included the tree's species, DBH, health and structural issues observed and pruning / maintenance requirements. In Hatch performed a rapid assessment of risk to iden y any concerns that would require further (Level 3) study.

Key Findings

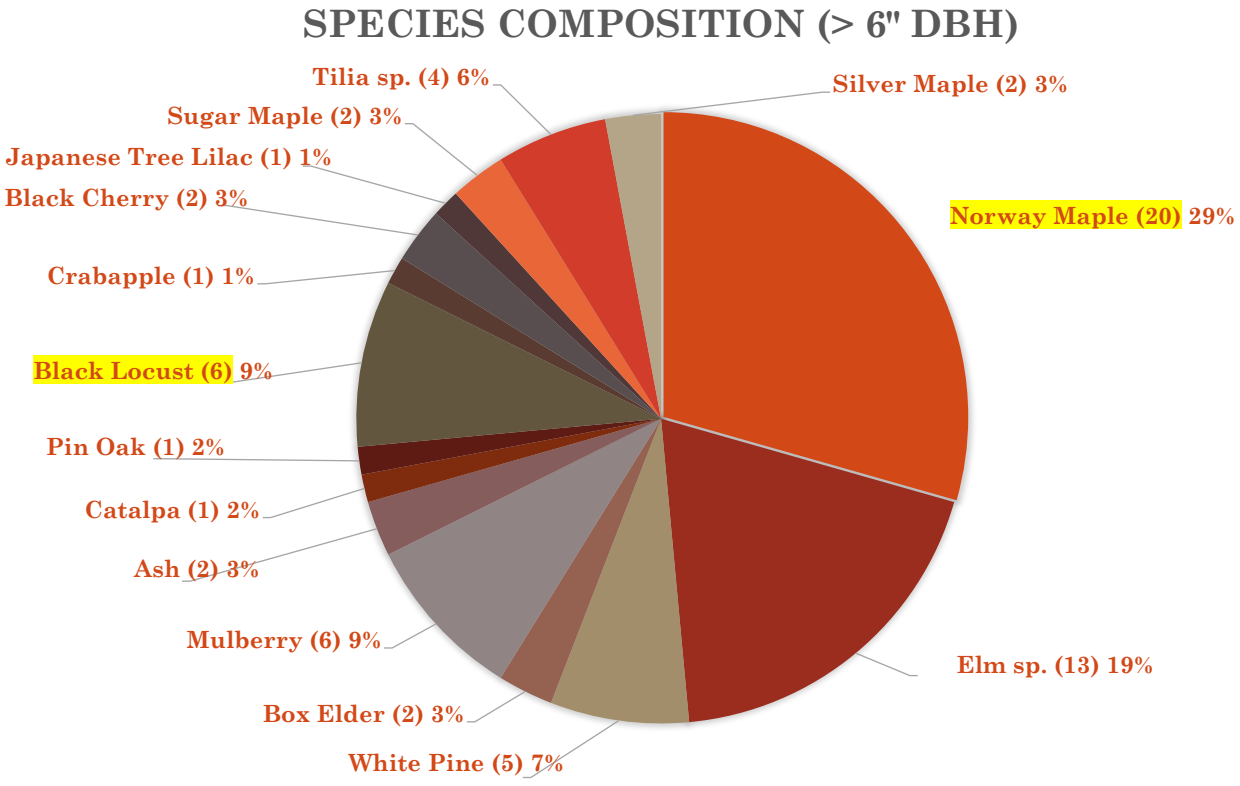
- (68) Total trees assessed.
- (7) Hazard trees recommended for removal due to public safety concerns for park users.
- (12) Trees require ant pruning to remove hazardous leaders and wisteria vine removal.
- 38% of all trees (greater than 6" DBH) are Massachuse state listed invasive species.

Tree Composition

Throughout the project area 68 sites were inventoried including. The e below shows the inventoried species compared to other species. Currently the project area is dominated by Norway Maple (29%) and Elm (19%). The c of a tree popula should follow the 10-20-30 Rule for species diversity: a single species should represent no more than 10% of the urban forest, a single genus no more than 20%, and a single family no more than 30%.

Massachuse state listed invasive species Norway Maple and Black Locust make up 38% of the species c These invasive species provide deep shade during summer months, but shade out and out compete na e specie while providing very towards wildlife habitat and food value.

Seven (7) hazard trees are recommended for removal due to public safety concerns. The Town of Arlington's 16, Tree Prot and Preserva bylaw would be used for guidance regarding tree removal and replacement a



TREE ASSESSMENT PLAN

Condition and Assessment

Several factors were considered for the c
of each tree, including root characteris branch
structure; trunk, canopy, and foliage c as
well as the presence of pests. The c of each
inventoried tree could be broken down as follows:
(R) Remove, (P) Prune, (M) Monitor, (H) Healthy.
See a ached loca diagram and assessment
table for further detail.

1. (R) – Removal Recommended:

Hatch recommends seven (7) hazardous trees be removed due to public safety concerns. The Town arborist should review and assess these trees (immediate a en

2. (P) – Pruning Recommended;

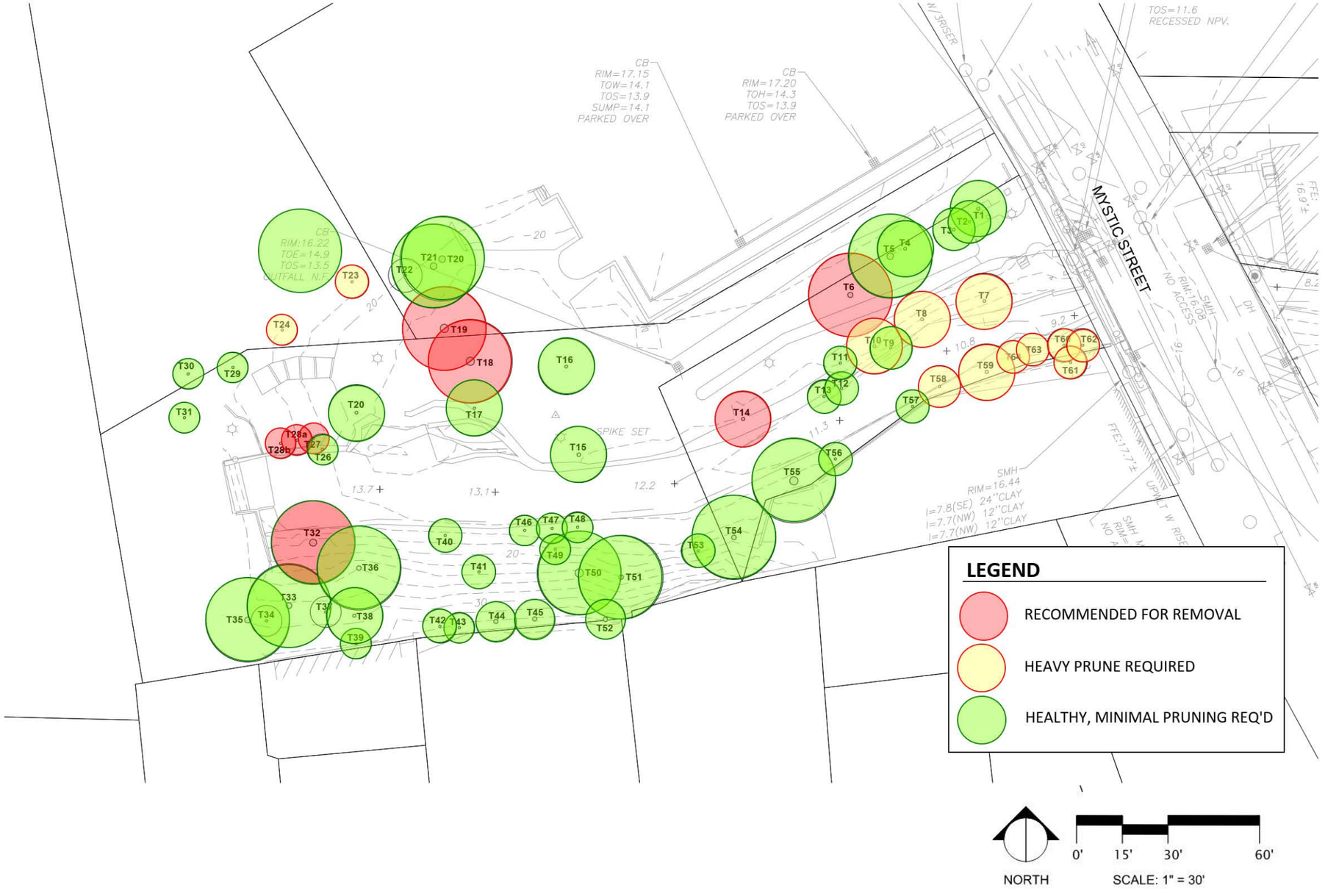
These trees are calculated to be a low or moderate risk and should be pruned (immediate a en

3. (M) – Monitoring Recommended:

Show signs for concern and should be monitored and assessed in the near future (no immediate a en

4. (H) – Healthy:

Appear in good c (require no a en



TREE ASSESSMENT TABLE

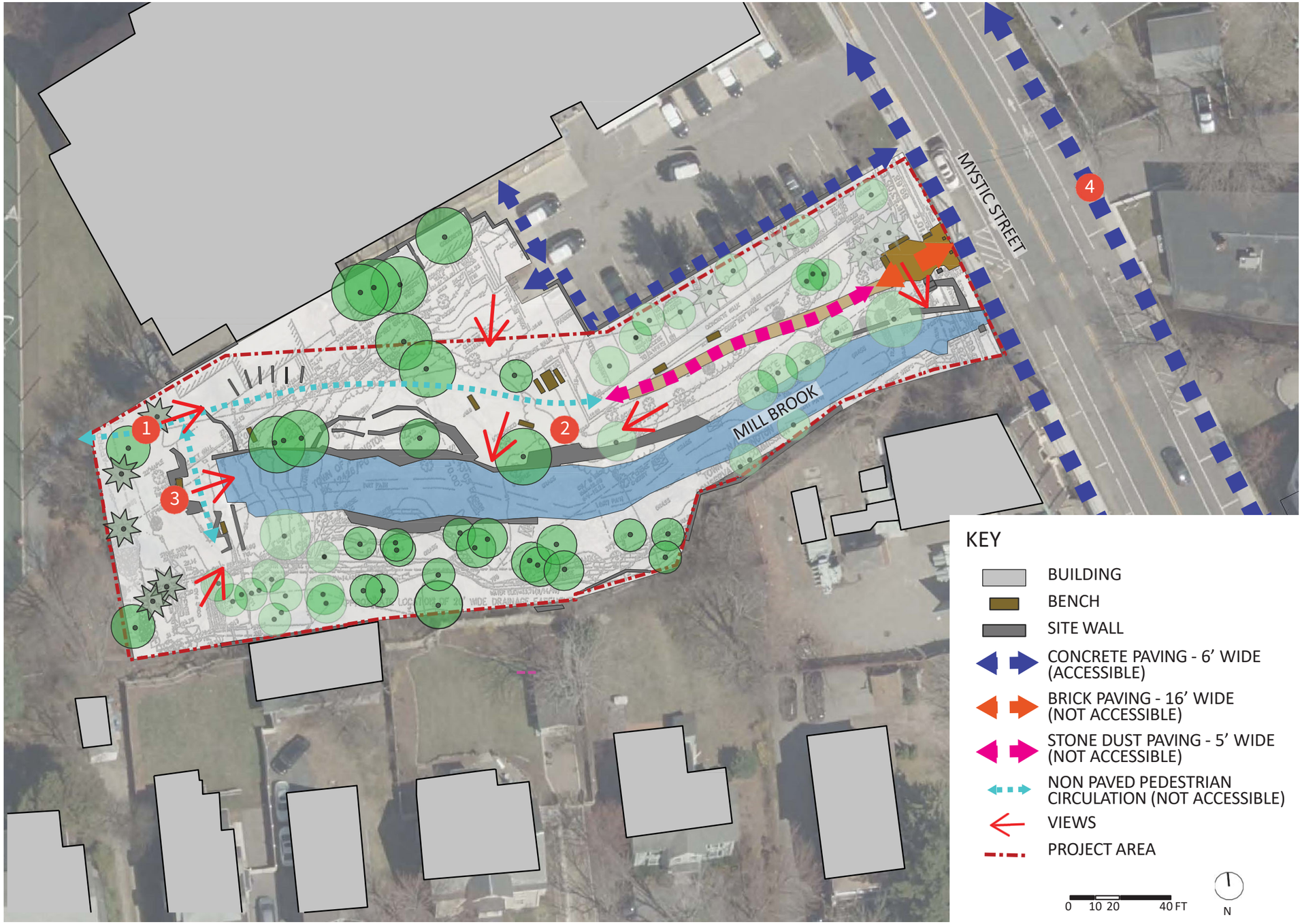
Cooke's Hollow - Tree Assessment

June 2023 **Assessment Key: H = Healthy, M = Monitor, P = Prune, R = Remov**

ID #	Botanical Name	Common Name	DBH	Health	Recommendations/Notes
T1	*Pinus strobus*	White Pine	14"	P	Prune to elevate over path, prune dead
T2	*Pinus strobus*	White Pine	10"	P	Prune to elevate over path, prune dead
T3	*Pinus strobus*	White Pine	12"	P	Prune to elevate over path, prune dead
T4	*Acer platanoides*	Norway Maple	12"	M	(4) Trees total; girdling roots
T5	*Acer platanoides*	Norway Maple	28"	M	
T6	*Acer negundo*	Box Elder	22"	R	
T7	*Fraxinus spp.*	Ash	15"	P	
T8	*Acer platanoides*	Norway Maple	16"	P	
T9	*Fraxinus spp.*	Ash	10"	P	
T10	*Catalpa spp.*	Catalpa	14"	P	
T11	*Quercus palustris*	Pin Oak	20"	P	
T12	*Acer negundo*	Box Elder	8"	P	
T13	*Morus spp.*	Mulberry	6"	P	
T14	*Morus spp.*	Mulberry	14"	R	Consider removing; snapped trunk/leaders
T15	*Robinia pseudoacacia*	Black Locust	16"	P	Prune dead
T16	*Malus spp.*	Crabapple	12"	P	
T17	*Robinia pseudoacacia*	Black Locust	10"	P	
T18	*Robinia pseudoacacia*	Black Locust	32"	R	
T19	*Robinia pseudoacacia*	Black Locust	32"	R	Split
T20	*Robinia pseudoacacia*	Black Locust	28"	P	Prune dead
T21	*Robinia pseudoacacia*	Black Locust	28"	P	Prune dead
T22	*Ulmus spp.*	Elm	14"	P	Prune dead
T23	*Morus spp.*	Mulberry	14"	P	Split at base; heavy prune to lighten canopy
T24	*Prunus serotina*	Black Cherry	6"	P	
T25	*Prunus serotina*	Japanese Tree Lilac	12"	H	
T26	*Ulmus spp.*	Elm	12"	P	
T27	*Morus spp.*	Mulberry	8"	R	Main leader snapped
T28a	*Morus spp.*	Mulberry	10"	R	(1) leader dead, (1) leader insect damage
T28b	*Morus spp.*	Mulberry	10"	R	Prune dead
T29	*Pinus strobus*	White Pine	16"	P	
T30	*Acer saccharum*	Sugar Maple	32"	P	Prune to elevate over path, prune dead
T31	*Pinus strobus*	White Pine	22"	P	
T32	*Acer platanoides*	Norway Maple	32"	R	
T33	*Acer saccharum*	Sugar Maple	24"	H	
T34	*Acer platanoides*	Norway Maple	6"	H	
T35	*Acer platanoides*	Norway Maple	24"	H	
T36	*Acer platanoides*	Norway Maple	20"	H	
T37	*Acer platanoides*	Norway Maple	6"	H	
T38	*Prunus serotina*	Black Cherry	14"	H	
T39	*Acer platanoides*	Norway Maple	6"	H	
T40	*Acer platanoides*	Norway Maple	6"	H	
T41	*Acer platanoides*	Norway Maple	6"	H	
T42	*Acer platanoides*	Norway Maple	6"	H	
T43	*Tilia spp.*	Linden	6"	H	
T44	*Ulmus spp.*	Elm	6"	H	
T45	*Tilia spp.*	Linden	6"	H	
T46	*Acer platanoides*	Norway Maple	6"	H	
T47	*Acer platanoides*	Norway Maple	6"	H	
T48	*Acer platanoides*	Norway Maple	6"	H	

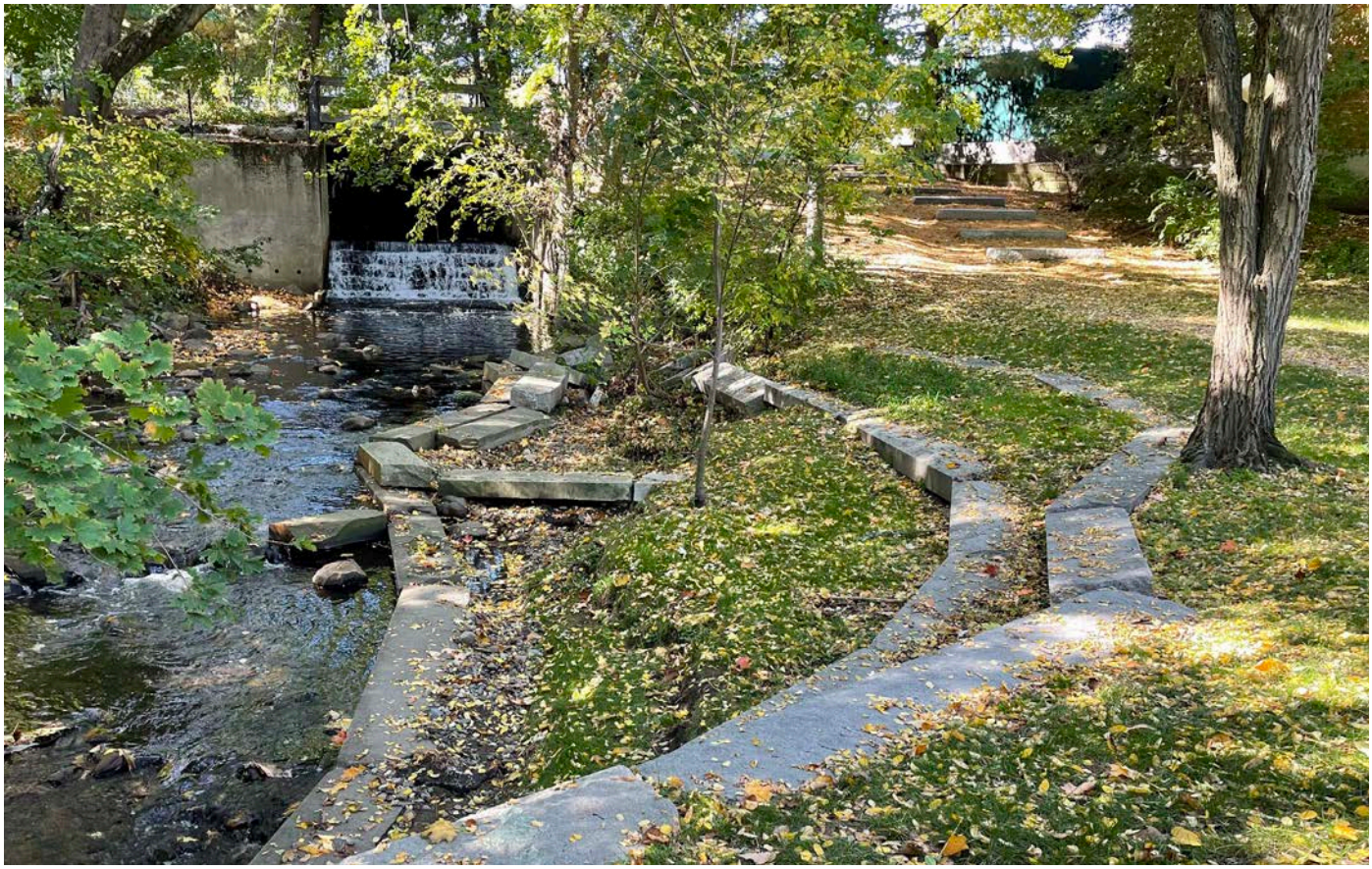
T49	*Acer platanoides*	Norway Maple	6"	H	
T50	*Tilia spp.*	Linden	36"	H	
T51	*Tilia spp.*	Linden	20"	H	
T52	*Acer platanoides*	Norway Maple	6"	H	
T53	*Ulmus spp.*	Elm	6"	P	Prune dead
T54	*Acer platanoides*	Norway Maple	20"	P	Leaning; prune dead
T55	*Ulmus spp.*	Elm	36"	M	
T56	*Acer saccharinum*	Silver Maple	12"	P	
T57	*Ulmus spp.*	Elm	20"	M	
T58	*Ulmus spp.*	Elm	8"	M	
T59	*Ulmus spp.*	Elm	8"	M	
T60	*Ulmus spp.*	Elm	8"	M	
T61	*Ulmus spp.*	Elm	10"	P	
T62	*Ulmus spp.*	Elm	6"	P	

SITE CIRCULATION AND VIEWS

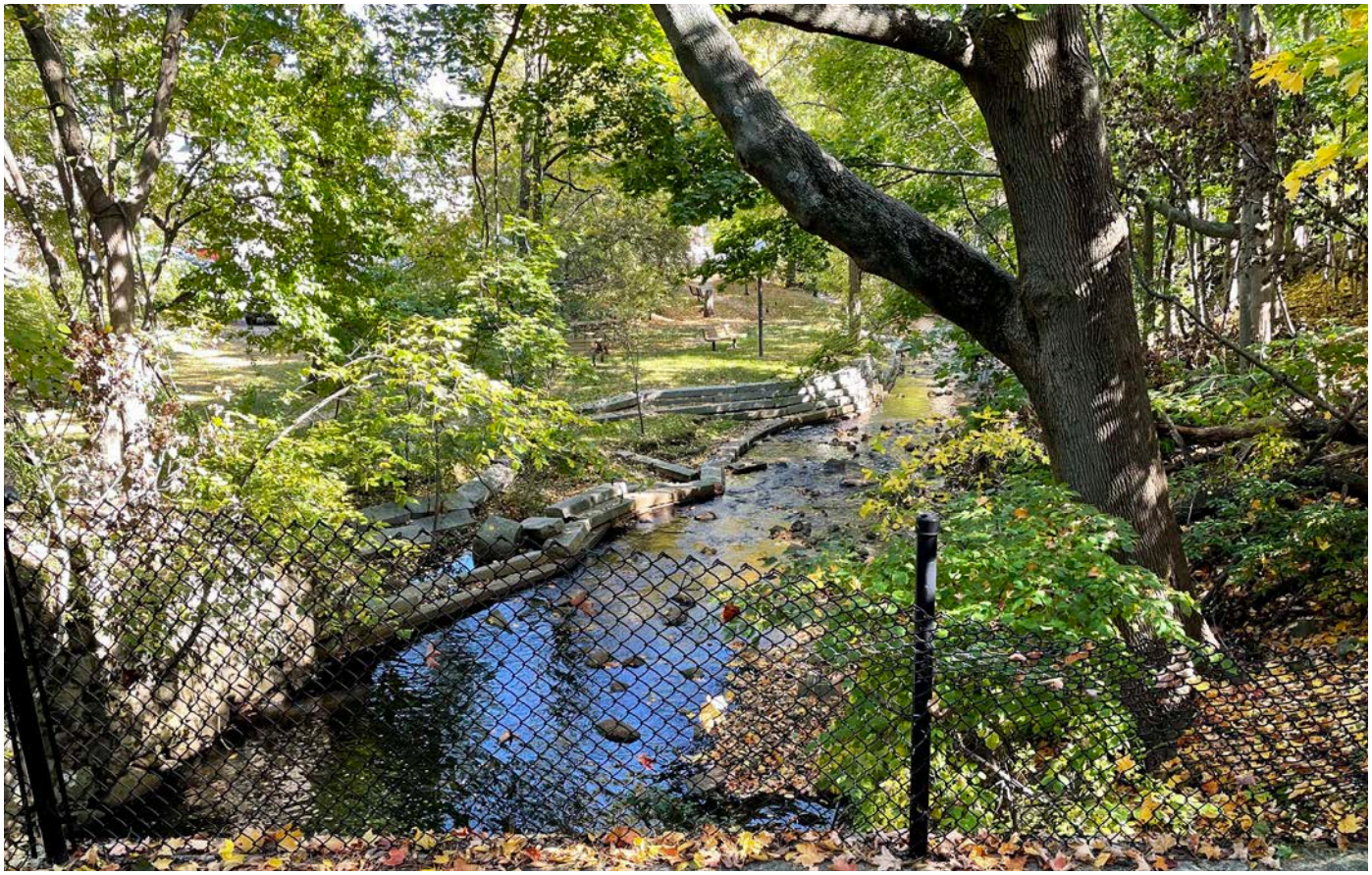


CIRCULATION AND VIEW

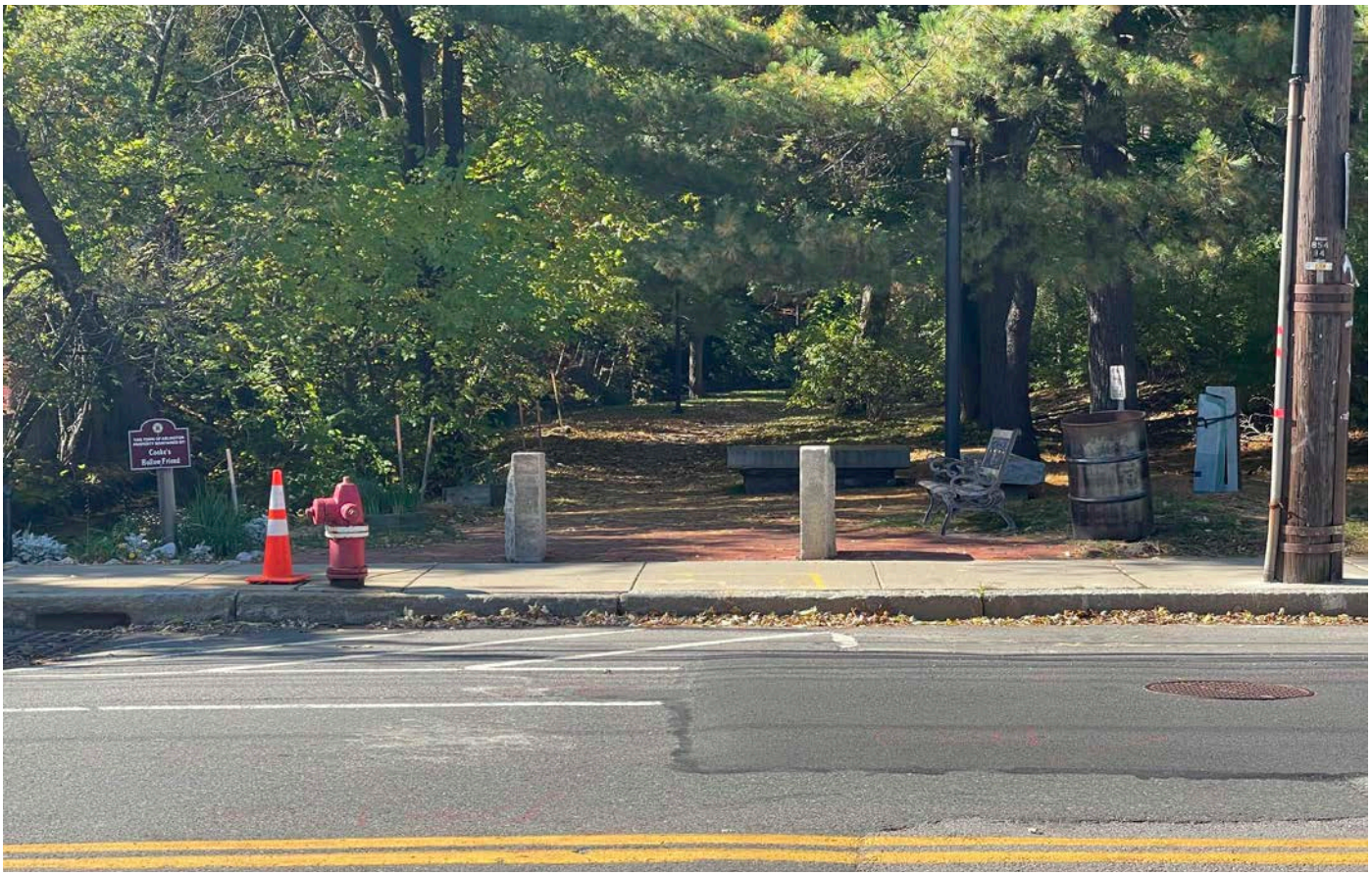
1 View Down Stream from Top of Stairs



2 View of Falls from Stone Dust Path



3 View Toward Mystic Street from Top of Falls



4 Main Park Entrance on Mystic Street

3. PRELIMINARY DESIGN CONCEPTS ALTERNATIVES AND RECOMMENDATIONS

*See Appendix B- Public Presenta forma egarding:

Accessibility Guidelines
- Universal Accessibility Goals (pg. 43)
- Path Width Op am (pg. 46)
- Review of Poten ath Surfacing Op

Site Furnishings
- Signage Examples (pg. 56)
- Site Ligh amples (pg. 59)

Invasive Plant Management (IPM)
- IPM Approach (pg. 65)

Plan
- Plant Community Based Design Approach Review (pg. 68)
- Examples of Plan

*See Appendix C- Public Presenta forma egarding:

Surfacing/Accessibility
- Stabilized Aggregate - Local Examples and Material Limita
- Example of Stepped Granite Block & Boulder Access to Waters Edge (pg.43)

Slope Restora
- Example of Slope Tree Removal Technique (pg. 33)

LEGEND

- EXISTING TREE TO REMAIN
- EXISTING TREE TO BE REMOVED
- 100 YEAR FLOOD LINE
- BUFFER PLANTING
- LAWN
- SLOPE RESTORATION PLANTING
- SHADE PLANTING RESTORATION
- BIORETENTION BASIN/BIOSWALE
- POROUS ASPHALT
- WOOD BOARDWALK
- GRAVEL/PEASTONE
- SWALE
- PICNIC TABLE
- BENCH

CUSACK TERRACE APARTMENTS

ARLINGTON POLICE DEPARTMENT PARKING LOT

ARLINGTON CATHOLIC PRACTICE FIELD

MILL BROOK FALLS

MILL BROOK

MYSTIC STREET

EVERSOURCE

BOARDWALK ON HELICAL PIERS WITH RAILINGS ON BOTH SIDES (APPROX. 180 LF @ 6.25% SLOPE, 30' RAMP RUNS WITH 5' LANDINGS)

BUFFER/SCREENING PLANTINGS ALONG PARKING LOT PERIMETER

UNIVERSALLY ACCESSIBLE POROUS ASPHALT SURFACE (5' WIDE TO MATCH EXISTING)

RESTORE BIOSWALE AND REMOVE DIRECT DRAINAGE PIPE TO MILL BROOK

NEW SITE FURNISHINGS: BIKE RACKS AND NEW TRASH / RECYCLING RECEPTACLES

SUBDUED PARK ENTRY; RELOCATE GRANITE BENCHES AND COOKE'S HOLLOW ENTRY PLAQUE NEAR FALLS, GRANITE ENTRY BOLLARDS TO REMAIN

MEMORIAL PLANT BED TO REMAIN (RECHARACTERIZE)

PICNIC AREA (RELOCATE EXISTING PICNIC TABLES)

SWALE AND BIORETENTION BASIN

INCORPORATE GREEN WALLS ON EXISTING RETAINING WALLS

GRAVEL PATH CONNECTION TO FIELD

PLANTED BUFFER ALONG ACHS FIELD

BLACK VINYL CHAIN LINK FENCE

CONCRETE PAD AND BENCH BOVE FALLS

NEW BLACK IRON RAILING (CONTEMPORARY)

SECONDARY SEATING AREA TO REMAIN (RESURFACE WITH STONEDUST)

REMOVE ALL STATE-LISTED INVASIVE SPECIES (KNOTWEED, BITTERSWEET, BUCKTHORN, ETC.

COMPLETE FULL SLOPE RESTORATION WITH NATIVE TREE, SHRUB AND GROUND COVER PLANTINGS

RESTORATION APPROACH: REMOVE AND DISPOSE OF ALL INVASIVE TREES ON SOUTH SIDE OF MILL BROOK (NORWAY MAPLE)

BUFFER PLANTINGS ALONG EVERSOURCE PROPERTY

EXISTING SITE LIGHTING TO BE REMOVED; NO SITE LIGHTING PROPOSED WITHIN THE PARK

RELOCATE COOKE'S HOLLOW BOULDER PLAQUE AND GRANITE BENCHES

100 YEAR FLOOD LINE

COOKE'S HOLLOW - Concept Alternative 1

Feasibility and Preliminary Design Study

N

0 15 30 60 Feet

Scale: 1" = 30'-0"

CONCEPT ALTERNATIVE 1: SURFACING AND ACCESSIBILITY

1. SUBDUED PARK ENTRY; RELOCATE GRANITE BENCHES AND COOKE'S HOLLOW ENTRY PLAQUE NEAR FALLS, GRANITE ENTRY BOLLARDS TO REMAIN.

2. UNIVERSALLY ACCESSIBLE POROUS ASPHALT SURFACE (5' WIDE TO MATCH EXISTING).

3. BOARDWALK ON HELICAL PIERS WITH RAILINGS ON BOTH SIDES (APPROX. 180 LF @ 6.25% SLOPE, 30' RAMP RUNS WITH 5' LANDINGS).

4. SECONDARY SEATING AREA TO REMAIN (RESURFACE WITH STONE DUST).

5. GRAVEL PATH CONNECTION TO FIELD.

6. FULLY ACCESSIBLE CONCRETE PAD AND BENCH ABOVE FALLS.

Wooden Boardwalk at Wellington Park

Wooden Boardwalk at Alewife Stormwater Wetland

Stainless Cable Railing Edge Example

Black Plastic Mesh Fabric Example

CONCEPT ALTERNATIVE 1: PLANTING, INVASIVE MANAGEMENT, AND GREEN INFRASTRUCTURE

1. TREE CANOPY RESTORATION APPROACH: REMOVE ALL INVASIVE TREES ON SOUTH SIDE OF MILL BROOK (DOMINANT NORWAY MAPLE CANOPY). *DIFFICULT SITE ACCESS, PHASE ACCORDINGLY.

2. REMOVE ALL STATE-LISTED INVASIVE SPECIES (KNOTWEED, BITTERSWEET, BUCKTHORN, ETC).

3. COMPLETE FULL SLOPE RESTORATION WITH NATIVE TREES, SHRUBS AND GROUND COVER PLANTINGS.

4. ALL NATIVE PLANT PALATE (BOSTON BASIN ECO-REGION PLANT COMMUNITIES). STRAIGHT SPECIES; NO CULTIVARS. PHASE ONE OF TWO PHASE CANOPY RESTORATION (ADAPTIVE MANAGEMENT STRATEGIES).

5. RESTORE BIOSWALE AND REMOVE DIRECT DRAINAGE OUTFALL PIPE TO MILL BROOK.

6. CAPTURE AND INFILTRATE STORMWATER RUNOFF FROM BALL FIELD WITH VEGETATED SWALE AND BIORETENTION BASIN AT BASE OF SLOPE.

7. SUPPLEMENT BUFFER/SCREENING PLANTINGS ALONG POLICE STATION PARKING LOT PERIMETER.

8. SUPPLEMENT BUFFER/SCREENING PLANTINGS ALONG BALL FIELD EDGE.

9. ADD BUFFER/SCREENING PLANTINGS ALONG EVERSOURCE PROPERTY EDGE.

10. INCORPORATE GREEN WALLS ON EXISTING RETAINING WALLS OF CUSACK TERRACE.

11. MEMORIAL PLANT BED AT MAIN ENTRANCE TO REMAIN (AND BE RE-CHARACTERIZED).

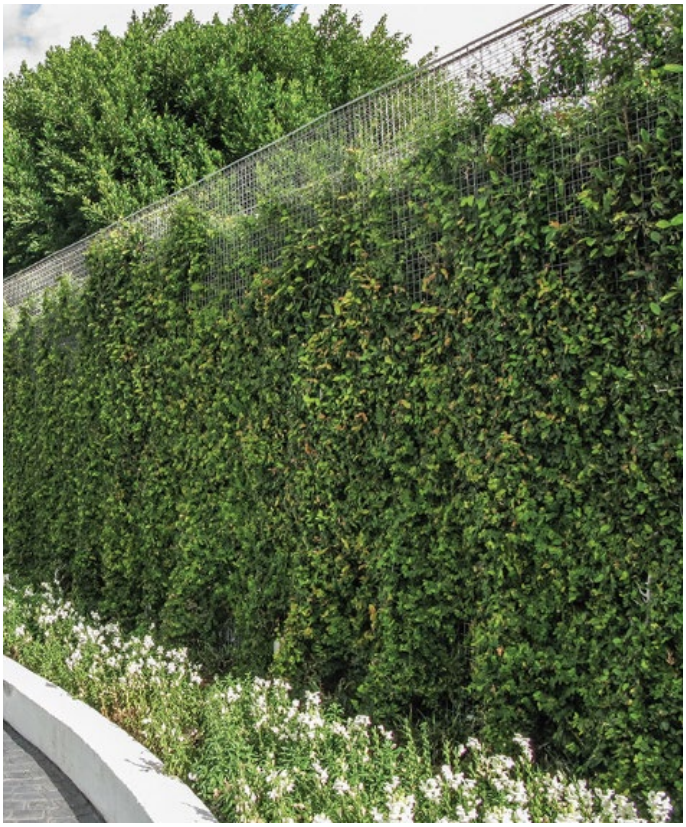
Steep Slope Restoration at Fresh Pond Reservation Cambridge

Vegetated Swale at Spy Pond Park

CONCEPT ALTERNATIVE 1: SITE IMPROVEMENTS

1. NEW SITE FURNISHINGS: BIKE RACKS AND NEW TRASH / RECYCLING RECEPTACLES.
2. SUBDUED PARK ENTRY; RELOCATE GRANITE BENCHES AND COOKE'S HOLLOW ENTRY PLAQUE NEAR FALLS, GRANITE ENTRY BOLLARDS TO REMAIN.
3. EXISTING SITE LIGHTING TO BE REMOVED; NO SITE LIGHTING PROPOSED WITHIN THE PARK.
4. RELOCATE COOKE'S HOLLOW BOULDER PLAQUE AND GRANITE BENCHES WITHIN VIEW OF THE FALLS.
5. NEW BLACK IRON RAILING (CONTEMPORARY STYLE) ABOVE FALLS.
6. BLACK VINYL CHAIN LINK FENCE ALONG BALL FIELD EDGE.
7. PICNIC AREA SHIFTED TOWARDS FALLS (EXISTING PICNIC TABLES RESET).

Stainless Cable Railing Edge Example


Stainless Cable Railing Edge Example

COST ESTIMATE - ALTERNATIVE 1

Cooke's Hollow

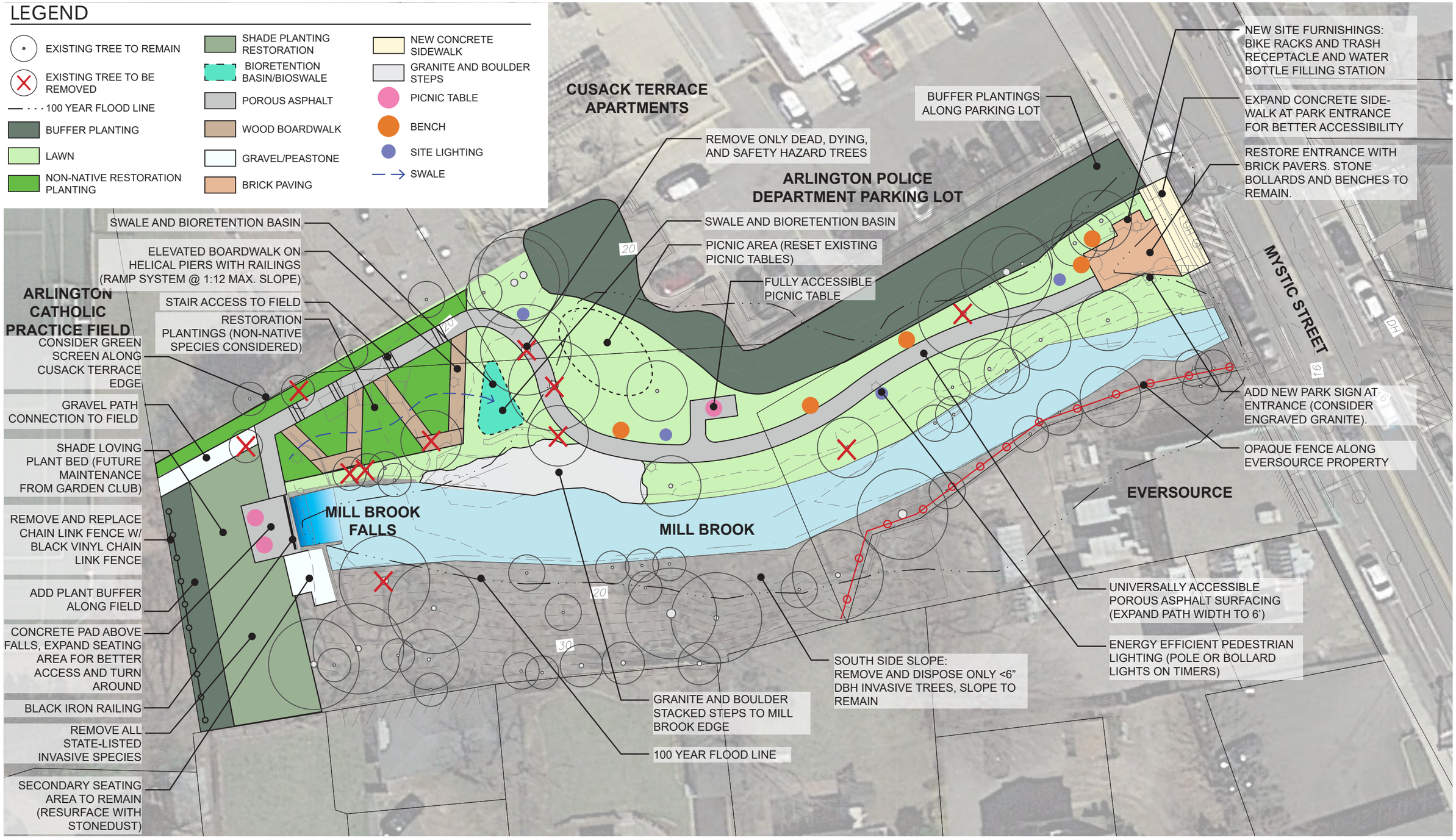
Concept Alternative Estimates of Probable Construction Cost

Feasibility Study and Preliminary Design

Arlington, MA

August, 2023

Concept Alternative 1		
ITEM	**COST**	**SCOPE AND NOTES**
Mobilization	$25,000	
Tree Removal	$23,000	Includes (19) trees as shown on plan. Equipment to be used: 45ton crane, Sennebogen 718E, skid steer and grapple, log truck and chip truck.
Site Prep and Grading	$45,000	Includes: Erosion and Sediment Control, Demolition, Removal and Stockpiling of Existing Site Furnishings, and Earthwork.
Hardscape and Surfacing	$260,000	Includes: Porous Bituminous Concrete Paving (5' Wide), Concrete Paving Pad Above Falls, Gravel Surfacing Connection to Field, Wooden Boardwalk with Handrails on Helical Piers.
Site Furnishing	$28,000	Includes: Reset Cooke's Hollow Plaque and Granite Benches, (2) Bike Racks, Trash and Recycling Receptacles, Resetting of Existing Picnic Tables and Wood Benches, (2) Granite Boulders with Engraving Graphics, Metal Railing Above Falls, Black Vinyl Chain Link Fence (6' HT) Along Field Edge.
Slope Restoration	$45,000	Includes: Coir Erosion Control Matting for Slope, 9" Slope Break Coir Logs, Amending of Soil, Woodland Seed Mix, and Shrub Planting.
Planting and Seeding	$94,000	Includes: Soil Amendments, Lawn seed, Woodland Seed Mix (for Slope Restoration), Buffer Plantings, (25) Canopy Tree Plantings, Shrub Plantings, Perennial Plantings, Plant Establishment Fencing, 1-year Landscape Warranty and Mowing, Watering for Plant and Seed Establishment.
Green Infrastructure	$20,000	Includes: Bioretention Basin and Infiltration Swale Restoration. (Soil Excavation, Biobasin Planting Soil, Plug Planting, Mulch and Plant Establishment Fence) *Basin Design Assumes No Overflow Structure
Bank Stabilization (place holder)	$210,000	Scope not included in concept design (assuming $350/LF at 600LF of bank)
Material and Labor	**$750,000**	
Insurance and Bonding (3%)	$22,500	
General Conds and Supervision (12%)	$90,000	
Overhead and Profit (10%)	$75,000	
CONSTRUCTION SUBTOTAL	**$937,500**	
Construction Contingency (8%)	$75,000	
Est. Construction Escalation (2025) (4%)	$37,500	
TOTAL OPINION OF PROBABLE COST	**$1,050,000**	



COOKE'S HOLLOW - Concept Alternative 2

Feasibility and Preliminary Design Study

N

0 15 30 60 Feet

Scale: 1" = 30'-0"

CONCEPT ALTERNATIVE 2: SURFACING AND ACCESSIBILITY

1. UNIVERSALLY ACCESSIBLE POROUS ASPHALT SURFACING (EXPAND PATH WIDTH TO 6').
2. EXPAND CONCRETE SIDEWALK AT PARK ENTRANCE FOR BETTER ACCESSIBILITY.
3. RESTORE ENTRANCE WITH BRICK PAVERS. STONE BOLLARDS AND BENCHES TO REMAIN.
4. ELEVATED BOARDWALK ON HELICAL PIERS WITH RAILINGS (RAMP SYSTEM @ 1:12 MAX. SLOPE).
5. GRANITE AND BOULDER STACKED STEPS DOWN TO MILL BROOK EDGE.
6. CONCRETE PAD ABOVE FALLS, EXPAND SEATING AREA FOR BETTER ACCESS AND TURN AROUND.
7. SECONDARY SEATING AREA ABOVE FALLS TO REMAIN AS IS AND BE RESURFACED WITH STONE DUST.
8. DIRECT STAIR ACCESS TO FIELD PARALLEL WITH UNIVERSALLY ACCESSIBLE RAMP SYSTEM.
9. GRAVEL PATH CONNECTION TO FIELD.

Porous Asphalt

Permeable Brick Pavers

CONCEPT ALTERNATIVE 1: PLANTING, INVASIVE MANAGEMENT, AND GREEN INFRASTRUCTURE

1. SUPPLEMENT BUFFER PLANTINGS ALONG PARKING LOT EDGE.

2. RESTORATION PLANTINGS: NON-NATIVE CLIMATE ADAPTED SPECIES TO BE CONSIDERED.

3. REMOVE ONLY DEAD, DYING, AND SAFETY HAZARD TREES TO BE REMOVED.

4. SOUTH SIDE SLOPE: REMOVE AND DISPOSE ONLY <6” DBH INVASIVE TREES. MATURE SLOPE CANOPY TO REMAIN AS IS.

5. SWALE AND BIORETENTION BASIN.

6. REMOVE ALL STATE-LISTED INVASIVE SPECIES.

7. ADD PLANT BUFFER ALONG FIELD EDGE .

8. SHADE LOVING PLANT BED ABOVE FALLS (DESIGN INPUT AND FUTURE MAINTENANCE FROM GARDEN CLUB).

9. CONSIDER GREEN SCREEN ALONG CUSACK TERRACE EDGE.

CONCEPT ALTERNATIVE 1: SITE IMPROVEMENTS

1. RESTORE ENTRANCE WITH BRICK PAVERS. STONE BOLLARDS AND BENCHES TO REMAIN AT ENTRANCE.
2. ADD NEW PARK SIGN AT ENTRANCE (CONSIDER ENGRAVED GRANITE).
3. ENERGY EFFICIENT PEDESTRIAN LIGHTING (BOLLARD LIGHTS, SEASONAL USE AND ON TIMERS).
4. OPAQUE FENCE ALONG EVERSOURCE PROPERTY.
5. NEW BLACK IRON RAILING ABOVE FALLS.
6. BLACK VINYL CHAIN LINK FENCE ALONG FIELD EDGE.
7. NEW FULLY ACCESSIBLE PICNIC TABLE.
8. PICNIC AREA RELOCATED (EXISTING PICNIC TABLES TO BE RESET).
9. EXISTING BENCHES TO BE RESET.
10. NEW SITE FURNISHINGS: BIKE RACKS AND TRASH RECEPTACLE AND WATER BOTTLE FILLING STATION AT MAIN ENTRANCE TO THE PARK.

Granite and Interpretive Signage at Arlington Reservoir


Park Bench


Drinking Fountain and Bottle Filling Station

COST ESTIMATE - ALTERNATIVE 2

Cooke's Hollow

Concept Alternative Estimates of Probable Construction Cost

Feasibility Study and Preliminary Design

Arlington, MA

August, 2023

Concept Alternative 2

ITEM	COST	NOTES
Mobilization	$25,000	
Tree Removal	$14,000	Includes (11) trees as shown on plan.
Site Prep and Grading	$45,000	Includes: Erosion and Sediment Control, Demolition, Removal and Stockpiling of Existing Site Furnishings, and Earthwork
Hardscape and Surfacing	$210,000	Includes: Porous Bituminous Concrete Paving (6' Wide), Wooden Boardwalk with Handrails on Helical Piers, Concrete Paving Pad Above Falls, Gravel Surfacing Connection to Field, Restored Brick Entry Plaza
Site Furnishing	$127,000	Includes: Granite and Boulder Stacked Steps to Brook, Reset Granite Benches, (2) Bike Racks, Trash and Recycling Receptacles, Resetting of Existing Picnic Tables and Wood Benches, (3) New Benches, (1) New Accessible Picnic Table, Drinking Fountain and Bottle Filler, (1) Granite Boulder with Engraving Graphic, Metal Railing Above Falls, Black Vinyl Chain Link Fence (6' HT) Along Field Edge.
Planting and Seeding	$80,000	Includes: Soil Amendments, Lawn seed, Buffer Plantings, (14) Canopy Tree Plantings, Shrub Plantings, Perennial Plantings, Plant Establishment Fencing, 1-year Landscape Warranty and Mowing, Watering for Plant and Seed Establishment.
Green Infrastructure	$8,000	Includes: Bioretention Basin (Soil Excavation, Biobasin Planting Soil, Plug Planting, Mulch and Plant Establishment Fence) **Basin Design Assumes No Overflow Structure
Bank Stabilization (place holder)	$210,000	Scope not included in concept design (assuming $350/LF at 600LF of bank)
Material and Labor	**$719,000**	
Insurance and Bonding (3%)	$21,570	
General Conds and Supervision (12%)	$86,280	
Overhead and Profit (10%)	$71,900	
CONSTRUCTION SUBTOTAL	**$898,750**	
Construction Contingency (8%)	$71,900	
Est. Construction Escalation (2025) (4%)	$35,950	
TOTAL OPINION OF PROBABLE COST	**$1,006,600**	

4. Public Feedback

HATCH

Meeting Summary

Attendees: David Morgan – Town of Arlington (ARL)
Matthew Pilis, Duke Bitsko – Hatch
Project: Cooke's Hollow Feasibility Study and Concept Design Alternatives
Subject: Public Forum #1
Date: May 5, 2023

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1. **Sign-in Sheet Participants:**
   Marilyn Sullivan, Ellen Cohen, David White, Beth Melofchik, Steve Makowka, Elisabeth Carr-Jones, Chris Ballman, Ann LeRoyer, Topher Heigham, Brian McBride, John Alessi, Karl Alexander, Nathaniel Stevens, Ellen Leigh, Keith Schnebly

2. **Project Overview Provided:**
   Town provided project overview; Hatch provided team background and overview of project components.

3. **Public Feedback:**

   3.1 - Site History

   a. Strong feeling historical significance should be factored into design.
   b. The site hosts the last of (9) dams that were once present in Arlington.
   c. The original park design won a national award.
   d. Native Americans have settled along the brook.
      - Nearby street is Sachem Avenue; Sachem - a North American Indian chief.
      - Consider a way to honor this historical aspect?
   e. The park is overseen by multiple parties within the Town of Arlington.
   f. One attendee noted that Old Schwamb Mill/website has relevant historical information.

   3.2 - Sense of Space/Identity and Site Concerns

   a. Noted site uses:
      - Meditative/contemplative space.
      - A place to cool off in the summer (unique microclimate).
      - Running water/associated noise = favorite amenity.
      - Spectate/enjoy various wildlife (fish, birds, etc.).
      - Place to eat lunch or take a break during the workday.
      - Used as through way for recreation walks/walking dogs.
   b. Noted wildlife observed in the park:
      - Ducks, Heron, Jays, Possums, Racoons, Fish: White Sucker, River Herring, Blueback Herring.
   c. Menotomy Rocks Park/Spring Street entrance named as an example of "naturalistic" entrance.
      - Some like the seating area at entrance, others indicated stone benches rarely used and preference toward a more subdued entrance with seating inside the space.

e. Number of invasive plants is an issue/concern; volunteer removal of invasives active and much appreciated.
f. Identify invasive tree canopy species/locations and prioritize a phased-removal approach.
g. The Town recently cut down and pruned existing trees within the property,negatively impacted the sense of enclosure within the park.
    - ARL noted a fund for new tree planting within the park will be part of the new project.
h. Several attendees would like to see plant ID tags on mature trees.
i. The planting at the Mystic Street entry to the park is maintained by the Garden Club; opportunities for Garden Club to be involved with new plantings? Potential for plant installation or maintenance.
j. For the past few years, girl scouts have volunteered to help remove invasive knotweed.
k. One attendee identified and suggested planting some of the oldest living trees (globally) in this park (ginkgo, magnolia, etc.).
l. Woodland understory planting options include – Native ferns, foamflower, white wood aster, spicebush, dogwood, witchhazel, etc....

3.6 - Future Town of Arlington Projects Identified:

a. DPW upcoming projects include the bridge on Mystic Street and the adjacent police station parking lot.
    - The parking lot project will have bioretention basins and will remove overland flow from the parking lot across the park to the brook.
    - The bridge project will be rebuilt – it will no longer have central supports underneath the bridge which are currently affecting the water flow.

4. Next Steps

a. Hatch to review public feedback with ARL.
b. Hatch to prepare list of design element scope for the (2) alternate concept plans based on the public meeting feedback.
c. Hatch to complete existing tree assessment and summary report.
d. Hatch and ARL to coordinate upcoming schedule and next public forum date.

Cc: All attendees.

d. Noise from adjacent Eversource site a concern/problem; potential fir "sound wall", vegetative or sound attenuation wall – what is visual impact?
e. At times planting "debris" from Cusack Terrace is dumped over the edge into the park.
f. Flooding of Mill Brook – the brook frequently floods into the park, one attendee noted that it once flooded into the adjacent (police station) parking lot.
g. Evening light pollution from the adjacent buildings; especially prevalent in winter.
h. Snow dumping adjacent to the parking lot – no snow storage on conservation land.

3.3 - Accessibility and Connectivity:

a. No curb cut/crosswalk at the park entrance.
b. Only one public access to the park, at Mystic Street.
c. The entirety of the park is not ADA accessible.
d. Consider increasing path width.
e. Potential to provide an ADA-compliant path (on-grade or ramp) addressing the steep slope adjacent to the high school athletic field and housing complex.
f. Buzzell Field Park – directly adjacent to the Arlington Catholic Field.
    - Consider greater context/connectivity between surrounding green spaces.
    - Strong feedback that connection should be provide to Buzzell Field.

3.4 - Hardscape and Site Elements

a. Trash receptacles: add an additional set of receptacles to minimize littering.
    - Potential access issue for pick up; ability to access through police station parking lot?
b. Path material(s): suggestions to keep a similar organic looking material for the path.
    - Consider options for "natural" material that is ADA compliant.
c. Light fixtures are broken and not aesthetically pleasing in character/design; as a Conservation Commission property, the park is technically open only from dusk to dawn.
    - Some observed site lighting may not be necessary due to excessive lighting from adjacent buildings.
d. Fencing at the top of the dam is unattractive and may not be code-compliant.
e. Multiple meeting attendees arrived on bikes and locked them up on a tree;future need for bicycle racks? Location(s)?
f. Interpretive signage opportunities; explore sign options and reference existing planning documents.
g. Wood on benches/picnic tables was recently replaced as part of an Eagle Scout project.

3.5 - Planting and Invasive Plant Management

a. Opportunities to showcase native plant material in an urban space – potential for educational opportunity.
b. Douglas Tallamy's book (*Bringing Nature Home*, 2007) identifies benefits of native plants to the greater ecology and wildlife habitat of the site echoed by many in the group.
c. Plant screening toward the police station and the street would provide visualand act as a sound barrier to amplify sounds of the brook.
d. Opportunity to utilize evergreen screening along the police station parking lot and the field edge of the site.

Meeting Summary

Attendees: David Morgan – Town of Arlington (ARL)
Matthew Pilis, Duke Bitsko – Hatch
Project: Cooke's Hollow Feasibility Study and Concept Design Alternatives
Subject: Public Forum #2
Date: June 14, 2023

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1. **Sign-in Sheet Participants:**
   UPDATE: Marilyn Sullivan, Ellen Cohen, David White, Beth Melofchik, Steve Makowka, Elisabeth Carr-Jones, Chris Ballman, Ann LeRoyer, Topher Heigham, Brian McBride, John Alessi, Karl Alexander, Nathaniel Stevens, Ellen Leigh, Keith Schnebly, Chuck Tyrone, Susan ?

2. **Project Overview Provided:**
   Town provided project update; Hatch presented Existing Conditions, Site Analysis and Conceptual Design Elements.

3. **Public Feedback:**
   Conceptual Design Elements
   a. Favored screening of Eversource Facility, south side of Mill Brook.
   b. Reconsider proposed surface materials containing rubber deemed as potentially harmful based on recent technical paper(s).
   c. If considering pea stone or stabilized stone dust, consider restoration and vegetating of adjacent swale, pitching the path away from the brook.
   d. Consider additional historic interpretations at Mystic Street entrance.
   e. Meet or exceed Riverfront Redevelopment Standards and design to current floodway standards (i.e. no structures).
   f. Strong preference for nature-based approach, while respecting the history and ungroomed nature of the park as it currently functions ("Arlington's little secret").
   g. Mitigate adjacent excessive light and sound to enhance existing sense of solitude.
   h. Involve the disabilities commission asap in discussions re: path materials, circulation routes, and site improvements (benches, lighting, tables, etc...).
   i. Replace existing plastic bench with timber and steel Town standard (Arlington Reservoir example).
   j. Lighting at Cusack Terrace identified as intrusive; consider moderate lighting along path and base of falls.
   k. Consider bigger picture and how this will be integrated with other parks and open spaces along Mill Brook.
   l. Minimize formal entrance at Arlington High practice fields.
   m. Be cognizant of Arlington's Tree Bylaw re: number of replacement trees for each tree over 6" caliper removed.
   n. Plan and design for low maintenance.

4. **Next Steps**
   a. Hatch to review public feedback with ARL.

27 School Street, 5th Floor, Boston, MA 02108

b. Hatch to visit site in development of concept alternatives; potentially meet with Arlington Police, Cusack Terrace, and disability representatives.
c. Hatch to develop (2) alternate concept plans based on the public meeting feedback.
d. Hatch to finalize the existing tree assessment and summary report.
e. Hatch and ARL to coordinate upcoming schedule and next public forum date.

Cc: All attendees.

Meeting Summary

Attendees: David Morgan – Town of Arlington (ARL)
Duke Bitsko, Andrew Keel, Matthew Pilis – Hatch
Project: Cooke's Hollow Feasibility Study and Concept Design Alternatives
Subject: Public Forum #3
Date: August 4, 2023

I. Virtual Participants:

UPDATE: Beth Melofchik, Cybille McDonald, Chuck Tyrone, Brian McBride, Elisabeth Carr-Jones,

II. Project Overview Provided:

- Town provided project overview and explained a follow up survey will be posted online to gather additional feedback.
- Hatch presented brief recap of existing conditions, site analysis, conceptual design elements and previous public feedback to date.
- Hatch presented (2) concept alternative plans with example images of various elements.
- Town provided glimpse of project at Meadow Brook Park (also in concept design phase).
- Question and answer period followed.

III. Public Feedback:

Concept Alternatives

1. Preference for mid-block crosswalk adjacent to Mystic Street entrance stated. Also, the need for additional parking (specifically handicap parking) along Mystic Street.
    i. Arlington noted that crosswalk concerns have been made known to other departments within the City and solutions are being considered.
2. Preference stated for vegetative alternative to fencing regarding screening/visual barrier between Arlington Catholic field and Cooke's Hollow. The use of densely spaced plant material vs. fencing (especially products containing plastics).
    i. Hatch explained black is vinyl coated chain link is an option to consider as it does not stand out, has a transparent quality and long-life span.
3. Concerns over rubbers/PFAS in paving materials and the dark color of proposed materials.
    i. Hatch explained porous asphalt does not contain rubber and noted that porous asphalt paving can be made with a red aggregate as opposed to black. Also, the surface color with lighten over time.
4. Lack of site analysis and design consideration related to restoration of the Mill Brook banks is concerning.
    i. Hatch/Arlington confirmed that the bank restoration will be studied and included in future phase(s) of the project. The hydrologic/hydraulic model of Mill Brook is ongoing and will be completed soon.
5. One resident noted shopping carts thrown in upstream travel down to Cooke's Hollow.
6. Suggestion to include observation platform/overlook similar to Spy Pond Park.
7. Dismay voiced over the potential removal of the large mature black locust trees. Preference voiced to replace them with large canopy flowering trees.

27 School Street, 5th Floor, Boston, MA 02108

   i. Hatch explained they are classified as a public safety hazard by the arborist and discussed species including Northern Catalpa, Tulip Tree and Big Leaf Linden as possible replacements.
8. Concerns of sump pump lines discharging into the brook from the southern slope. One resident also mentioned that water might have been getting pumped from the brook.
   i. In future phases, Arlington will investigate and act accordingly.
9. Concerns of trash (condoms, toilet paper) being left at the top of the falls, as well of signs of students using the upper section of the park as a "restroom." Would like to consider trash receptacles and dialogue with Arlington Catholic regarding arrangements for restrooms close to the field to prevent this from happening.
10. Preference for a more formal entry from the Arlington Catholic Field (suggested granite pillars similar to main entry on Mystic Street).
11. One resident voiced support for maintaining historic granite benches at park entry.
12. Strong public desire for direct access to water's edge of Mill Brook as part of the design.
13. Many see Cooke's Hollow as less of a formal "park" and more of a "natural space". Suggested limiting traditional picnic table and bench elements.
14. Eastern white pines provide a strong element towards the naturalistic sense of space.
15. Discussion regarding (T-32) a large Norway maple near base of falls and status as a hazard tree to be removed.
   i. Hatch explained the leader and crown of the tree are damaged. It appears the tree may have been struck by lightning. Hatch reiterated removal of trees from the southern bank should be prioritized during first phase of the project to facilitate removal access without damaging new amenities.
16. Question about the possibility of leaving downed trees and snags as part of slope restoration improvements for wildlife value.
   i. Hatch agreed and stated they have used this approach on past projects.
   ii. Hatch offered to accompany anyone on a tour of a completed slope restoration project at Fresh Pond Reservation for comparison.
17. Concerns regarding removal of too many canopy trees at one time and the space becoming too bright. Preference to "get this project right" as it is an incredibly unique space within the park system of Arlington. Funding for the "non-traditional" project should be a Town priority and worthy of strong political support.
   i. Hatch explained the invasive canopy restoration can be phased based on Town preference, but to consider the difficult southern bank access as it relates to phasing.
18. Concerns of over the restricted nature of a two railing boardwalk – not able to walk off at any point if it is elevated.
19. Strong public desire to plan and design with materials that require low maintenance.
20. Lack of interest in more formal site furnishings such as the water fountain/bottle filler and picnic tables. Example of less formal drinking fountain at World's End provided.
21. Benches looking towards falls should have backs on them.
22. Consider smooth transitions between constructed and natural areas to create an organic overall feel and balance sense of place with the movement through the space.
23. Strong sentiment universal accessibility to the top of the falls is very appealing.
24. Comment that non-native trees such as magnolia, ginko and metasequoia should be included as part of the project plant palette as they are some of the oldest in the world.
25. Attention should be paid to fauna and ways to promote a healthy ecosystem and wildlife habitat at Cooke's Hollow ("how can we make the space more desirable for wildlife").

i. Hatch explained native plants are one of the foundational elements of a healthy wildlife systems. Research has shown native plants host an increased quantity and diversity of insects providing a broad food web.

IV. Next Steps

1. Hatch to review public feedback with ARL.
2. Hatch to submit preliminary cost estimates for the two alternative plans.
3. Hatch to submit final report deliverable including all project materials and public feedback to date.

Cc: All attendees.

APPENDICES

COOKE’S HOLLOW PARK RESTORATION
COMMUNITY MEETING 1
EXISTING CONDITIONS & SITE ANALYSIS

ARLINGTON
MASSACHUSETTS

Cooke’s Hollow Site Improvements

HATCH

AGENDA

1. **INTRODUCTIONS**

2. **PROJECT OVERVIEW**
   Project Goals
   Project Timeline

3. **PRESENTATION**
   Existing Conditions
   Site Analysis

4. **COMMUNITY FEEDBACK**
   Public Discussion
   Public Comment

5. **CLOSING REMARKS + NEXT STEPS**

PROJECT TEAM

DAVID MORGAN - TOWN OF ARLINGTON
Project Manager
Contact Information (if Desired)

DUKE BITSKO - HATCH
Director of Design

ANDREW KEEL - HATCH
Landscape Architect + Project Manager

PROJECT OVERVIEW

PROJECT SCHEDULE

Late April 2023
Community Meeting # 1:
Existing Conditions & Site Analysis

May 2023
Community Meeting # 2:
Concept Alternatives

June 2023
Community Meeting # 3:
Preferred Concept Design

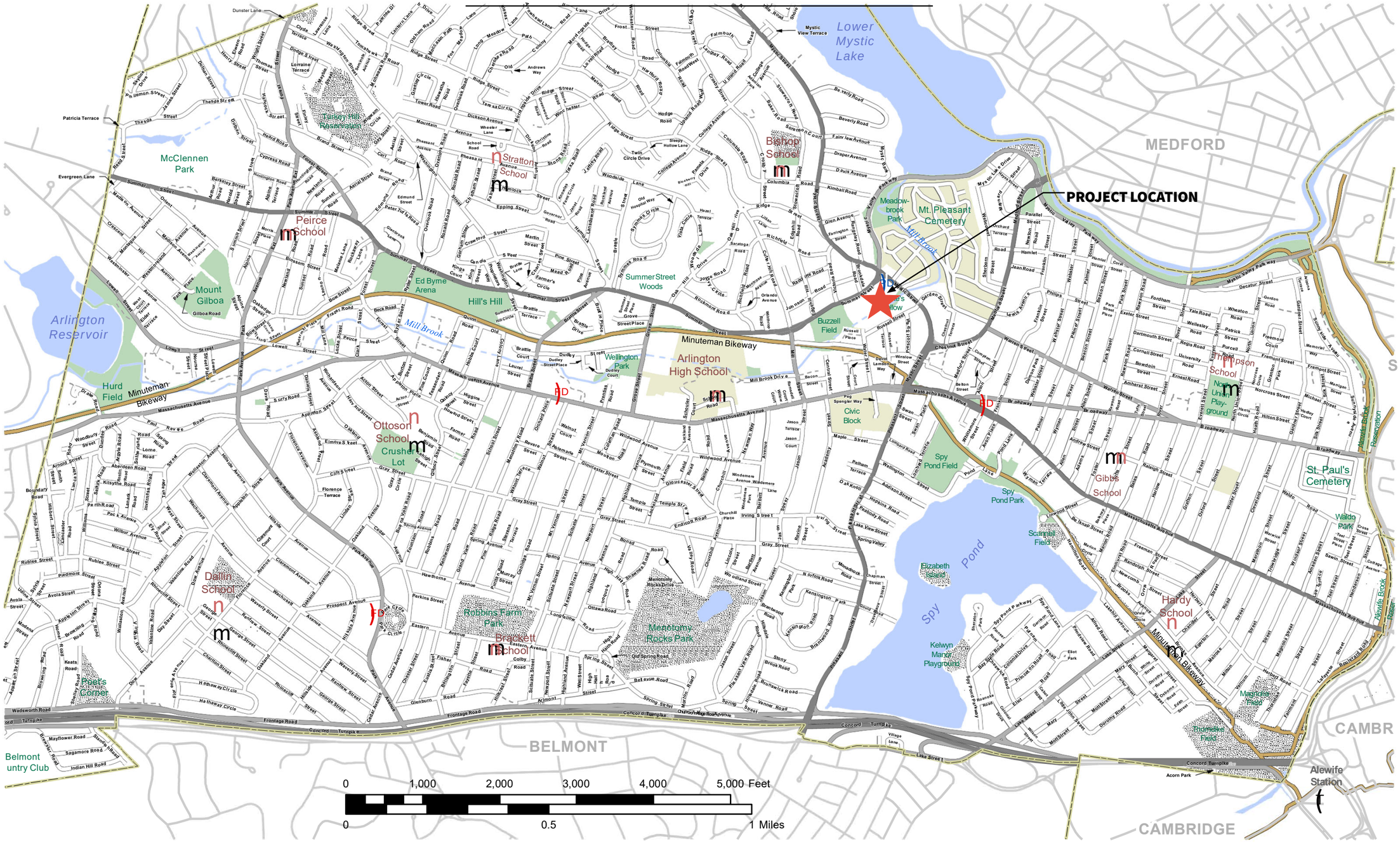
June 2023
PARC Grant Application

TBD
Construction Documents

TBD
Park Construction & Opening

EXISTING CONDITIONS + SITE ANALYSIS

PROJECT LOCATION



SITE CONTEXT

EXISTING CONDITIONS PLAN

EXISTING CONDITIONS PHOTOS

1 Memorial Plaque

2 Granite Entry Piers & Paving

3 Stonedust Path & Benches

4 Granite Treads

5 Granite Retaining Edge

6 Chain link Fence with Debris

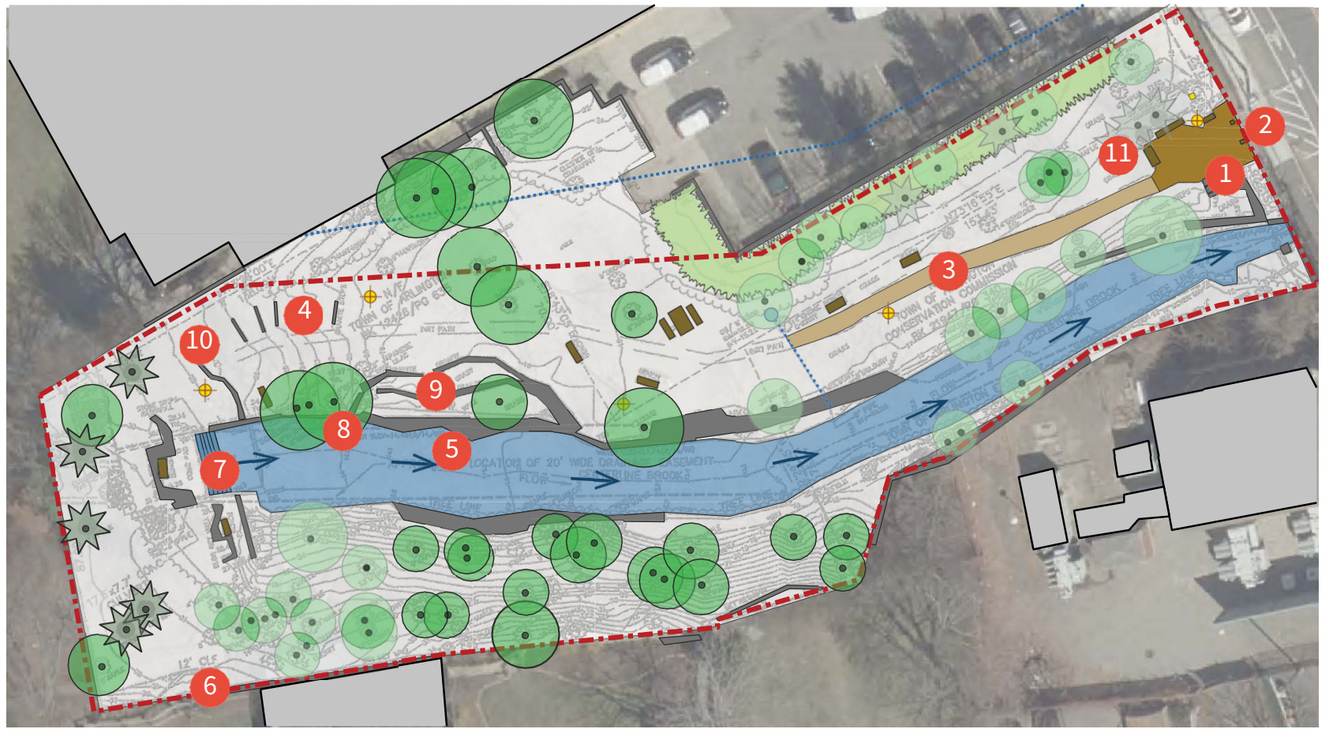
7 Waterfall

8 Stacked Granite Edge

9 Granite Retaining Edge

10 Looking East at the Top of The Slope

11 Granite Bench at Park Entrance



SITE ENTRANCE ENLARGEMENT

1 Memorial Plaque

5 Entrance Plantings

2 Granite Entry Piers & Paving

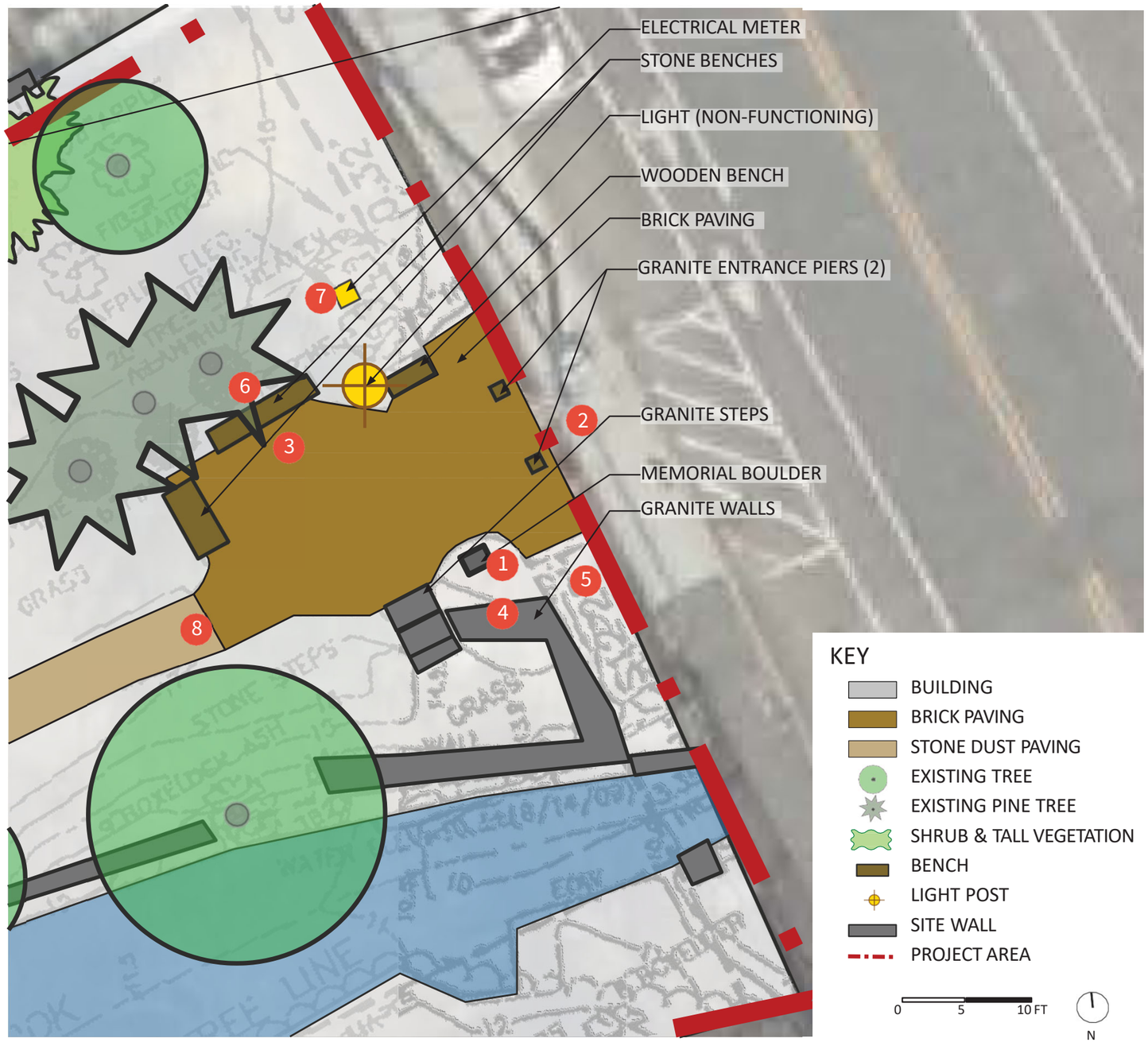
6 Granite Bench & Dog Sign

3 Granite Benches

7 Electrical Meter

4 Granite Boulder Wall

8 Brick to Stonedust Transition



SHORELINE CONDITIONS

1 Boulder Edge

5 Natural Edge Southern Side

9 Manmade Dam & Wall

10 Stream at High Water

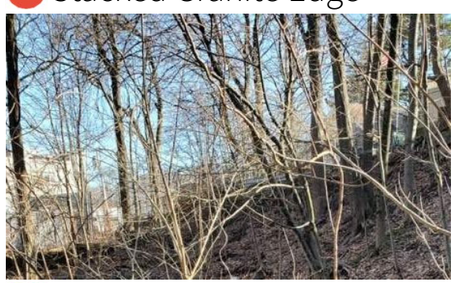
11 Granite Edge with Lawn

2 Edge at Bridge Abutment

6 Armored Edge on Steep Slope

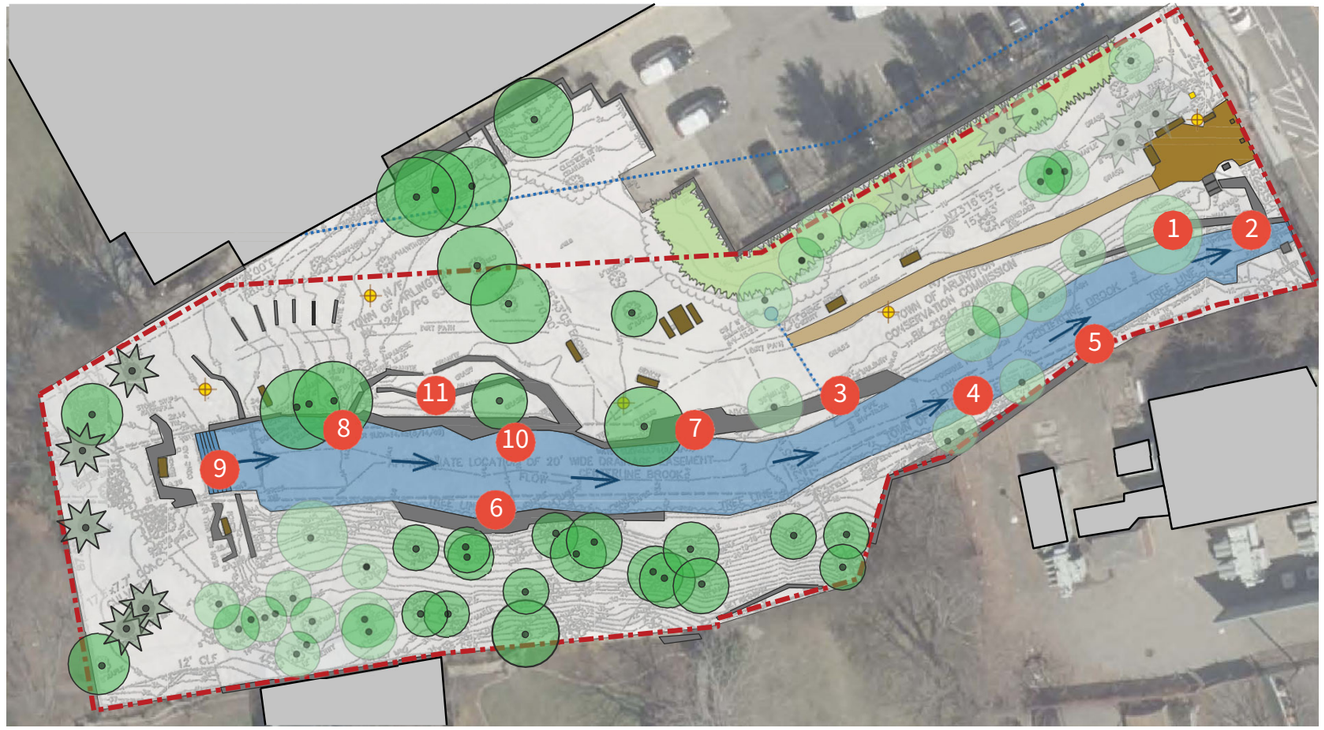
3 Stacked Granite Edge

7 Stacked Granite Edge



4 Natural Edge Southern Side

8 Stacked Granite Edge In Need of Repair



SITE FENCING AND EDGE CONDITIONS

1 Building Edge & Wall

2 Wooden Guardrail

3 4’ Chain Link Fence

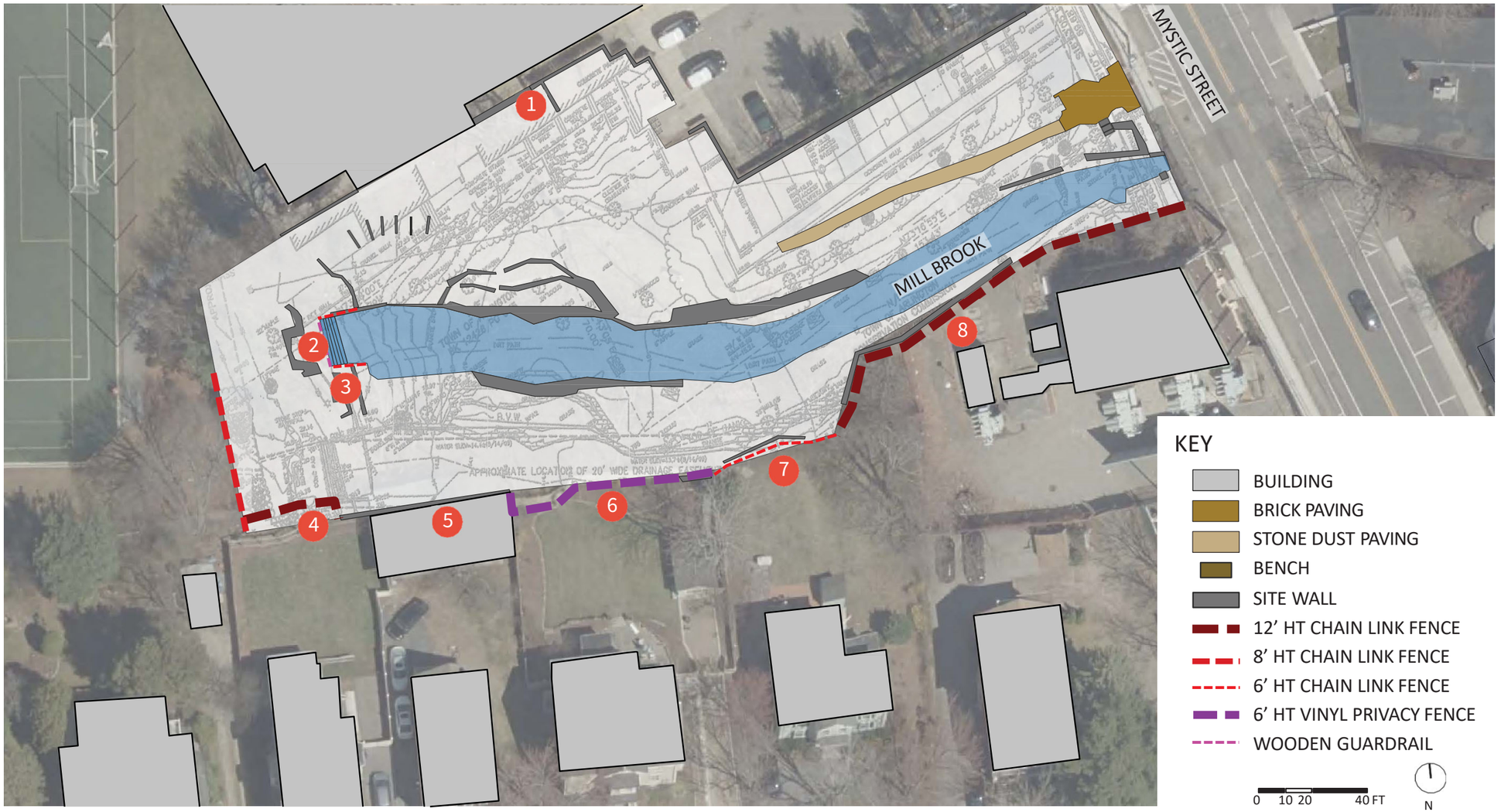
4 Chain Link Fence Retaining Debris Behind

5 Stone Wall and Building

6 Privacy Fence

7 6’ Chain Link Fence

8 12’ Chain Link Fence & Wall



SITE FURNISHINGS

1 Granite Benches

4 Granite Bench

5 Wooden Path Bench

6 Picnic Table

7 Stone Overlook Bench

2 Wooden Bench

3 Light Fixture

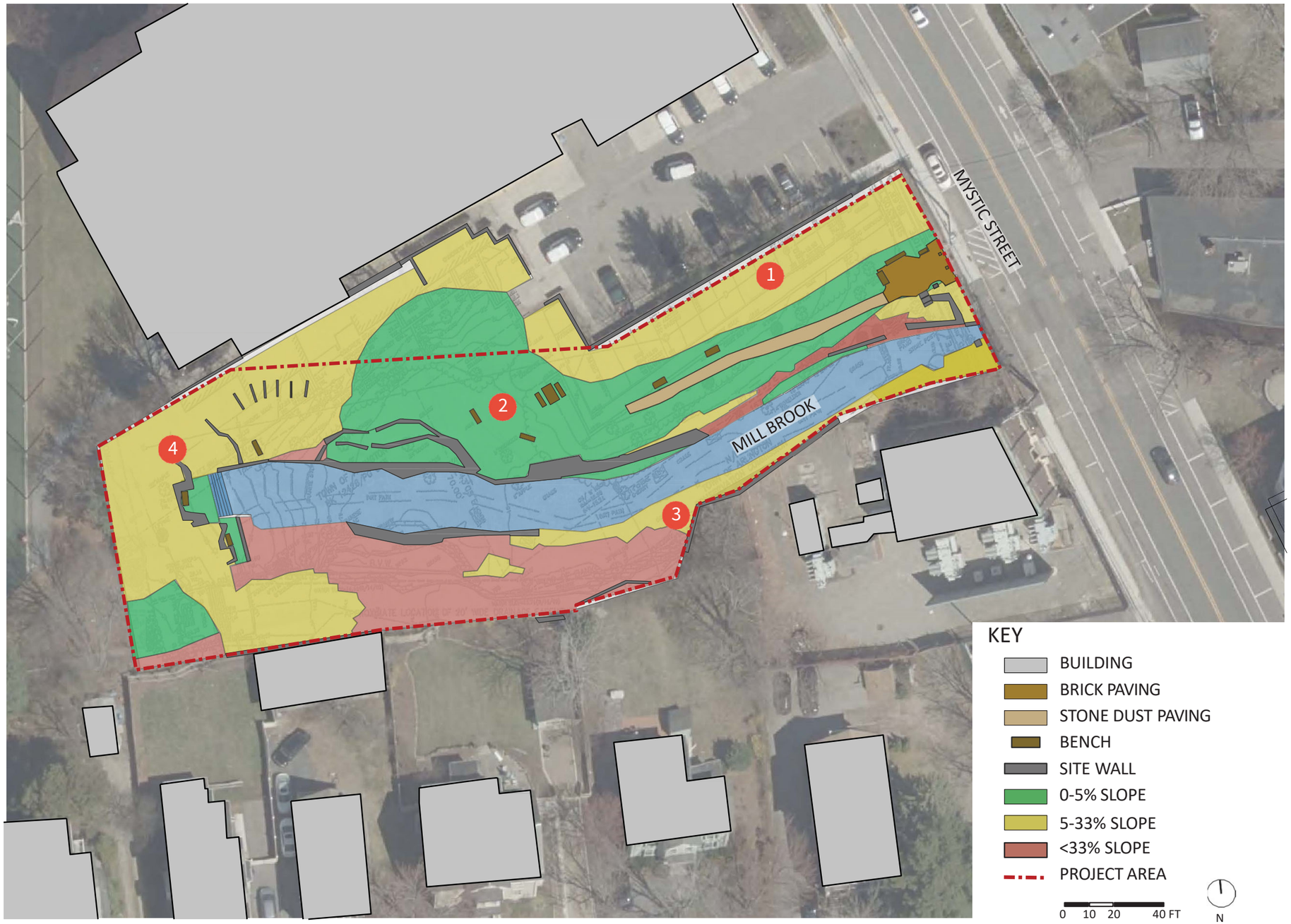
SITE SLOPE PLAN

1 Planted Slope by Police

2 View of Level Area of Park

3 View of Southern Slope

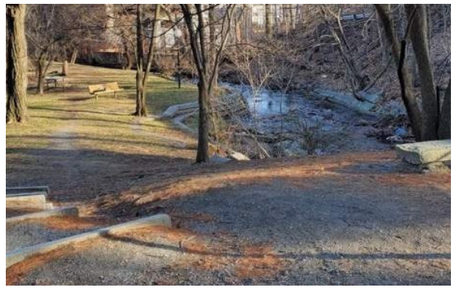
4 View of Upper Landing



SLOPE ASPECT

SOIL COMPACTION & EROSION

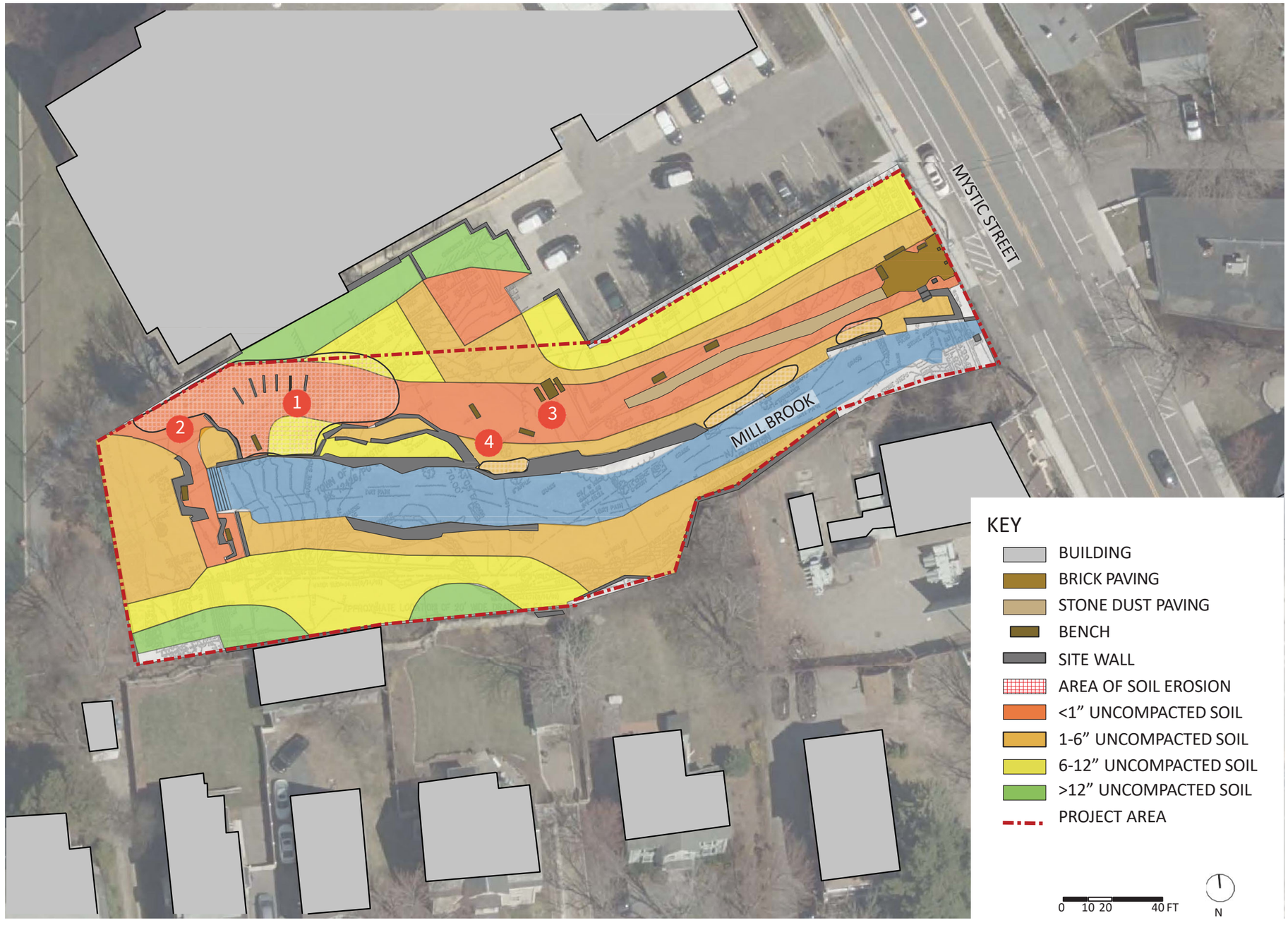
1 Erosion at Granite Treads



2 Compacted Gravel at Top

3 Standing Surface Water

4 Erosion Behind Granite



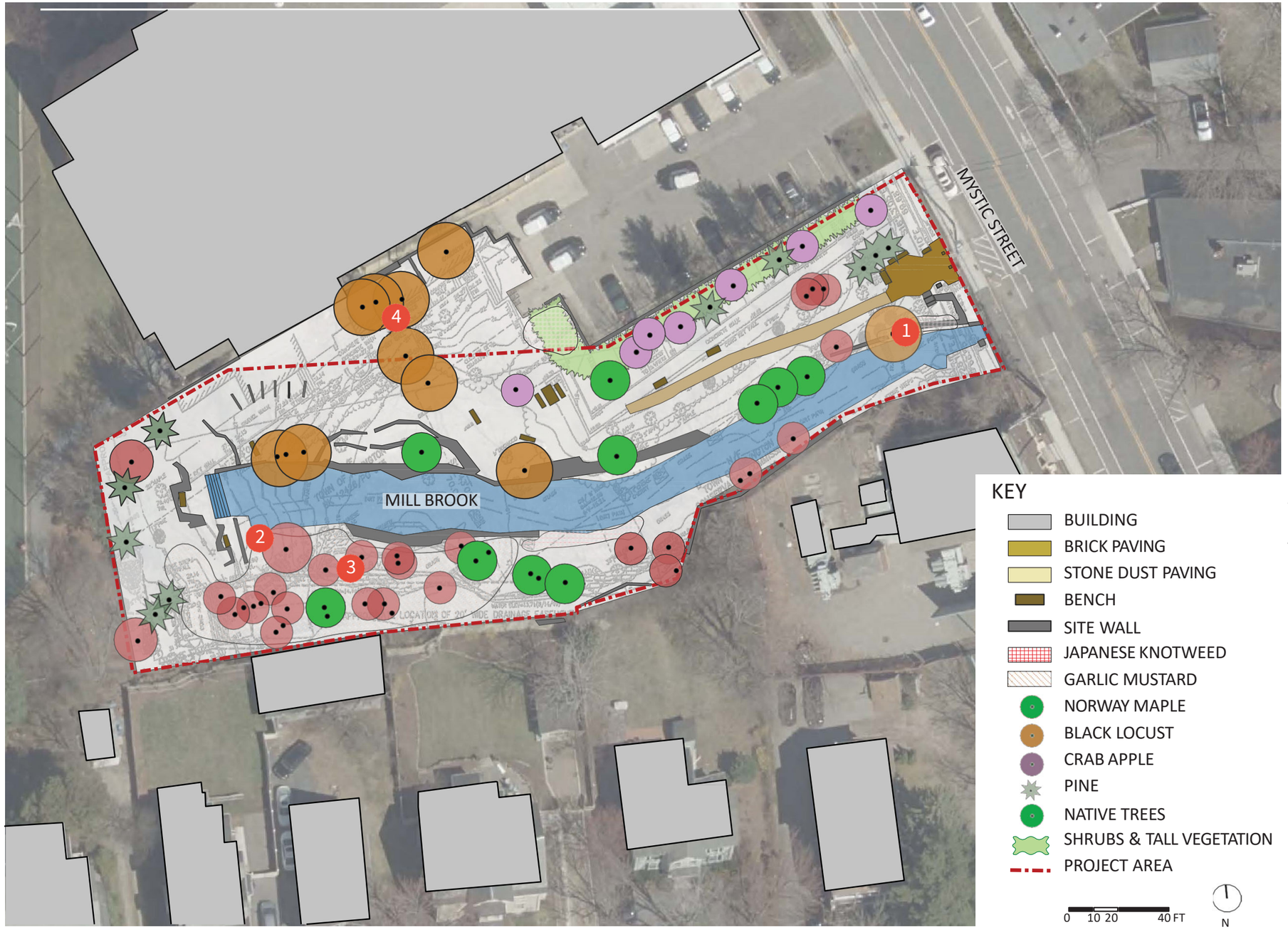
VEGETATION

1 Japanese Knotweed

2 Native Mountain Laurel

3 Norway Maples

4 Black Locust Trunks



VEGETATION PHOTOS

NATIVE PLANTS PRESENT ON SITE


American Basswood - Leaves


American Basswood - Bark


Slippery Elm - Leaves


Slippery Elm - Bark


Black Cherry - Leaves


Black Cherry - Bark


Mountain Laurel


White Pine - Needles


White Pine - Growth Form

VEGETATION PHOTOS

INVASIVE PLANTS PRESENT ON SITE


Garlic Mustard - MIPAG Invasive


Japanese Knotweed -MIPAG Invasive


Bittersweet - MIPAG Invasive


Bittersweet - Berries


Norway Maple - MIPAG Invasive


Norway Maple - Bark


Amur Honeysuckle - MIPAG Potentially Invasive


Buckthorn - MIPAG Invasive


Black Locust - MIPAG Invasive


Black Locust - Bark


Multiflora Rose - MIPAG Invasive

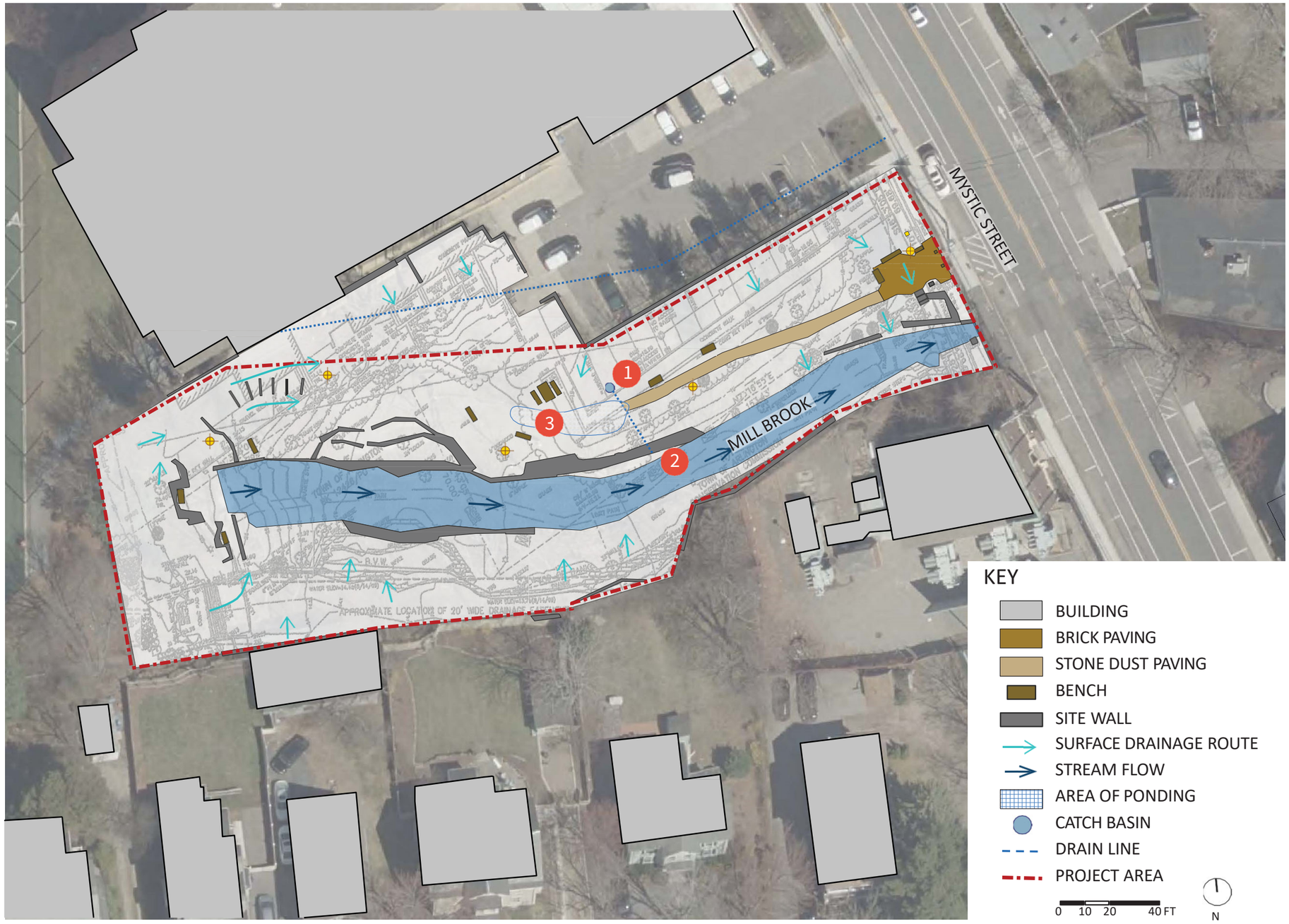

Mulberry - MIPAG Evaluated

SURFACE HYDROLOGY

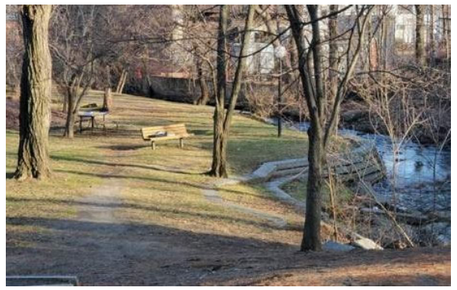
1 Catch Basin

2 Catch Basin Outfall

3 Standing Surface Water



SITE CIRCULATION AND VIEWS

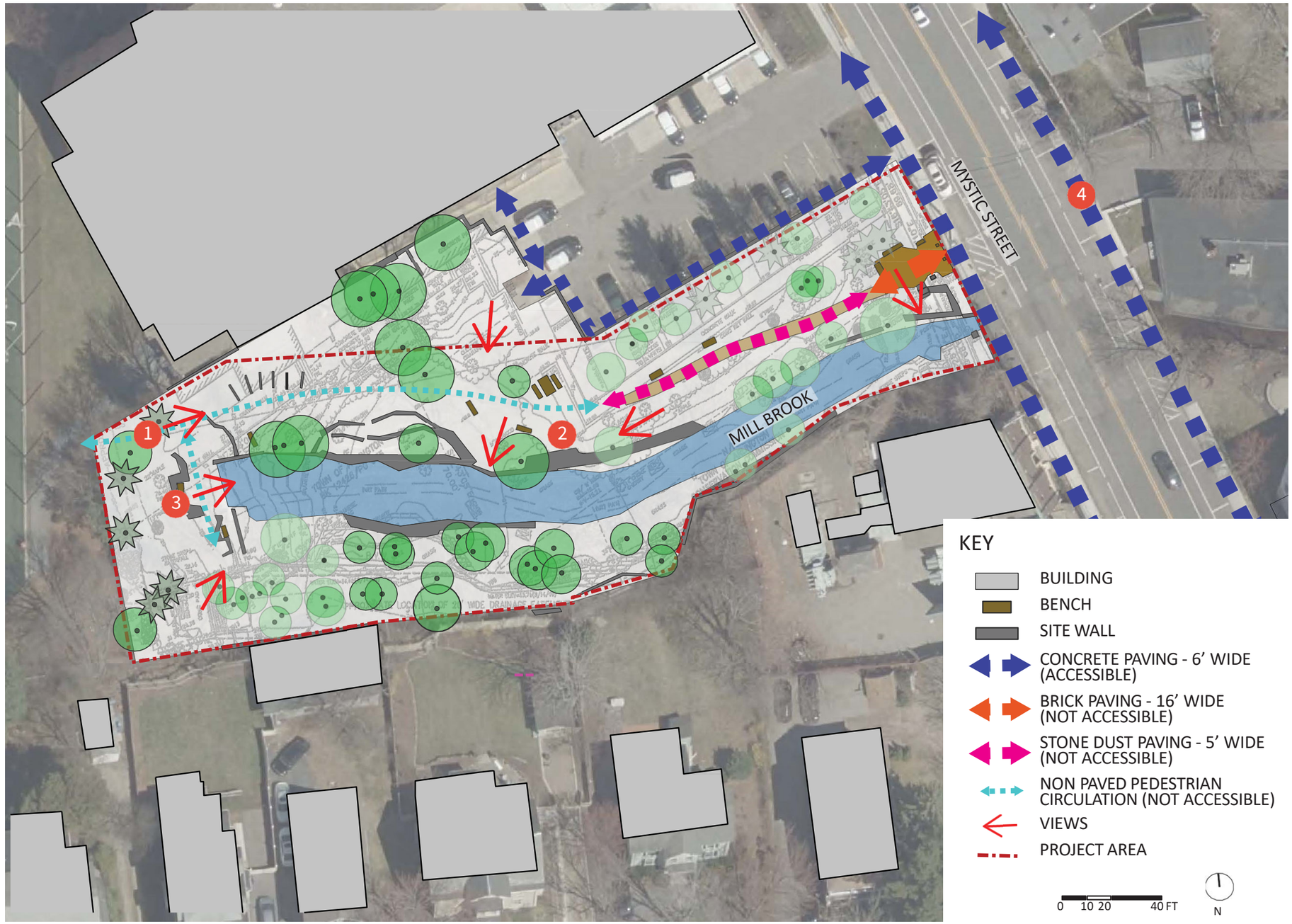


1 View East

2 View of Waterfall

3 View from Top of Waterfall

4 Entry on Mystic



LISTENING + DISCUSSION

EXISTING CONDITIONS PLAN

NEXT STEPS

February 2023
Community Meeting # 1:
Existing Conditions & Site Analysis

April 2023
Community Meeting # 2:
Concept Alternatives

June 2023
Community Meeting # 3:
Preferred Concept Design

June 2023
PARC Grant Application

TBD
Construction Documents

TBD
Park Construction & Opening

APPENDICES

B Public Presentation 2

Cooke's Hollow
Feasibility Study and Preliminary Design

Town of Arlington, MA

Public Meeting #2

June 14, 2023

HATCH

Agenda

1. **PROJECT OVERVIEW**
    - Project Team
    - Project Goals and Objectives
    - Project Timeline
2. **PRESENTATION**
    - Existing Conditions / Site Analysis
    - Conceptual Design Elements
3. **COMMUNITY FEEDBACK**
    - Public Discussion and Comment
4. **CLOSING REMARKS + NEXT STEPS**

Project Team

- **DAVID MORGAN (TOWN OF ARLINGTON) –** Town Project Manager
- **DUKE BITSKO (HATCH) -** Director of Design
- **ANDREW KEEL (HATCH) -** Landscape Architect + Project Manager
- **STAKEHOLDERS:**
  - Arlington Conservation Commission
  - Cusack Terrace Residents
  - Arlington Police Department
  - Eversource
  - Arlington Garden Club
  - Neighbors
  - Arlington Catholic High School River

Questions and Comments

Please take notes and save questions and comments for discussion following the presentation.

We will have a plan view screen share to help facilitate feedback and document comments.

THANK YOU!

How to provide feedback

- This presentation will be recorded and posted on the Town website.

- Town of Arlington Contact:
  DMORGAN@TOWN.ARLINGTON.MA.US

- For more information and a project survey visit:

Town Plans to Revitalize Cooke's Hollow | Planning News and Notices | Town of Arlington (arlingtonma.gov)

https://www.arlingtonma.gov/Home/Components/News/News/13341/2651?backlist=%2fdepartments%2fplanning-community-development

Cooke's Hollow Project Goals and Objectives

1. **Data Gathering:**

   Evaluate existing conditions and site analysis data to identify potential opportunities for improvements with emphasis on ecological integrity and climate resilience.

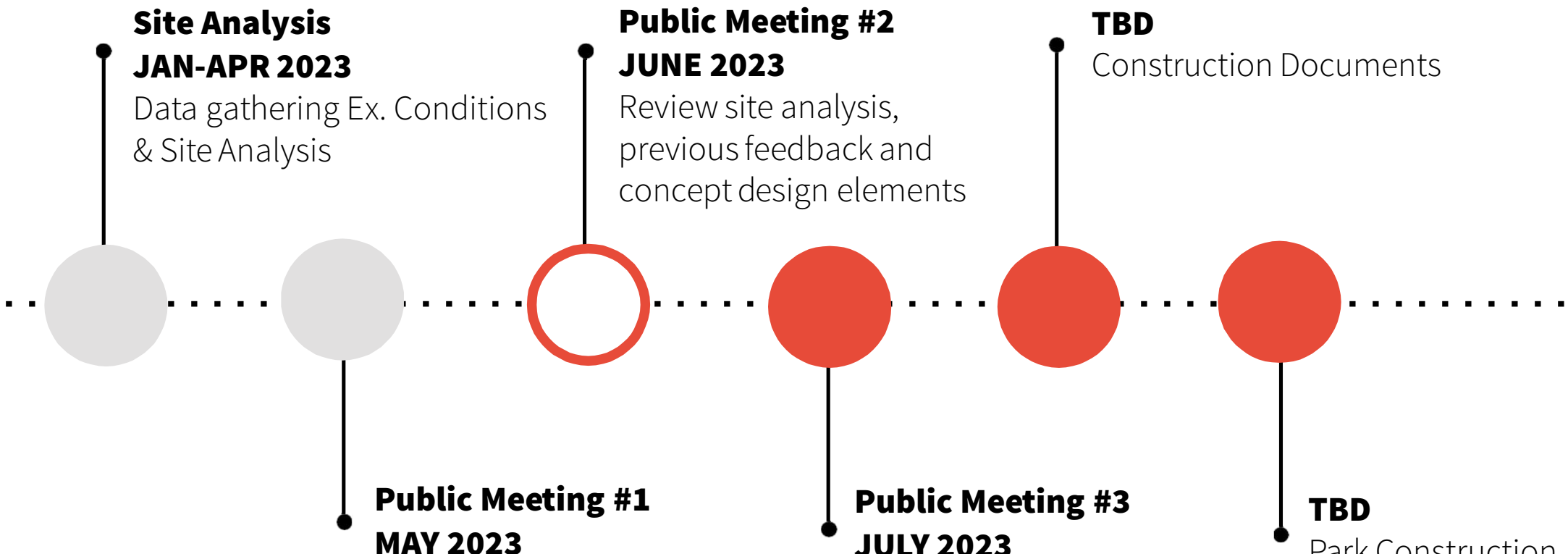
2. **Community Feedback**

   Engage community stakeholders to solicit feedback to inform preliminary design concepts.

3. **Feasibility Study and Preliminary Design**

   Use data and feedback to identify and propose conceptual design opportunities with a focus towards environmentally sustainable planning and engineering approaches.

Project Timeline



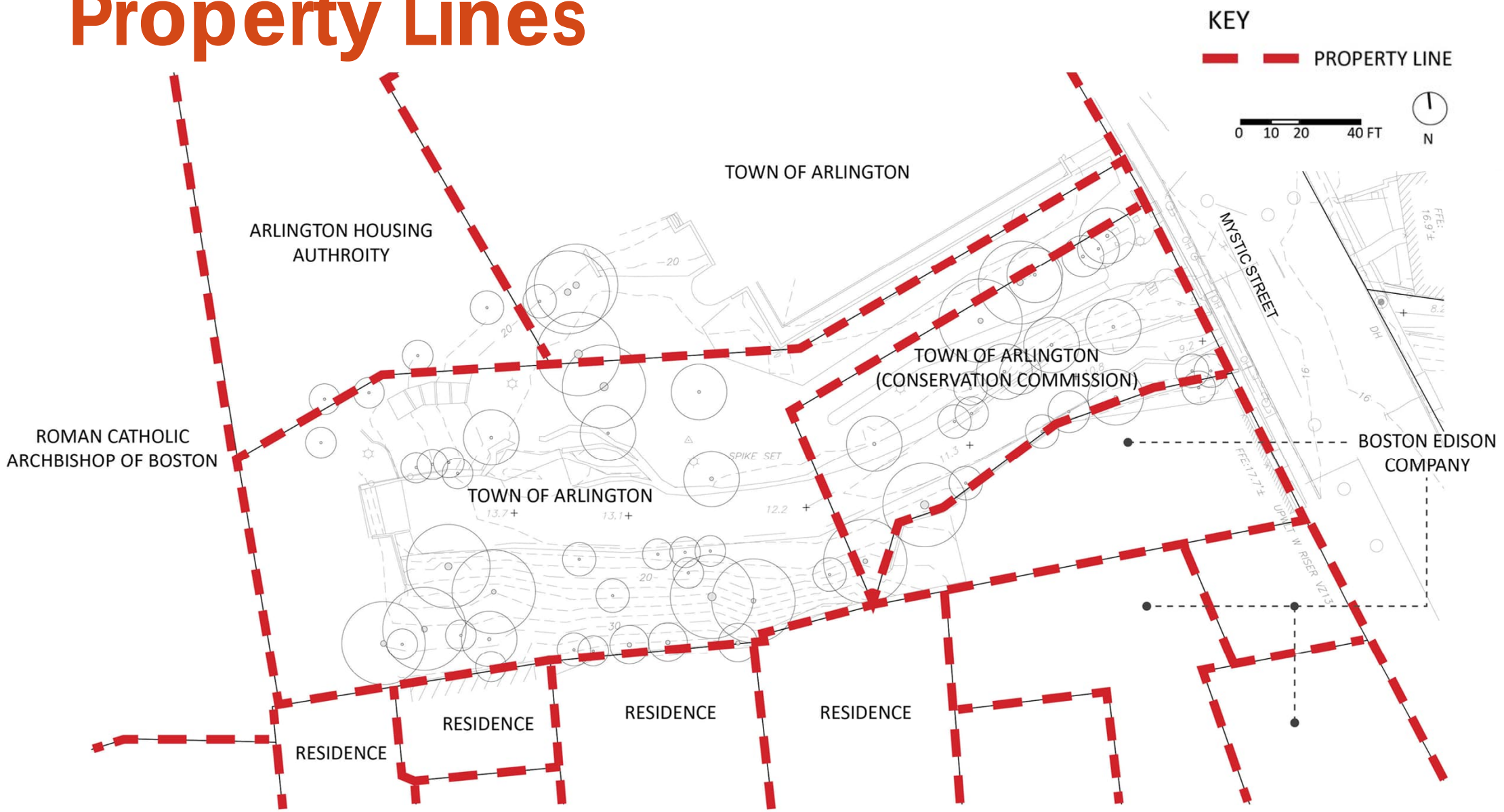
Public Meeting #1 – May Block Party

Public Meeting #2 – Goals and Objectives

1. Review existing conditions and site analysis data (ecological and cultural).
2. Review preliminary concept design elements.
3. Open discussion to garner community feedback on preliminary concept design elements.

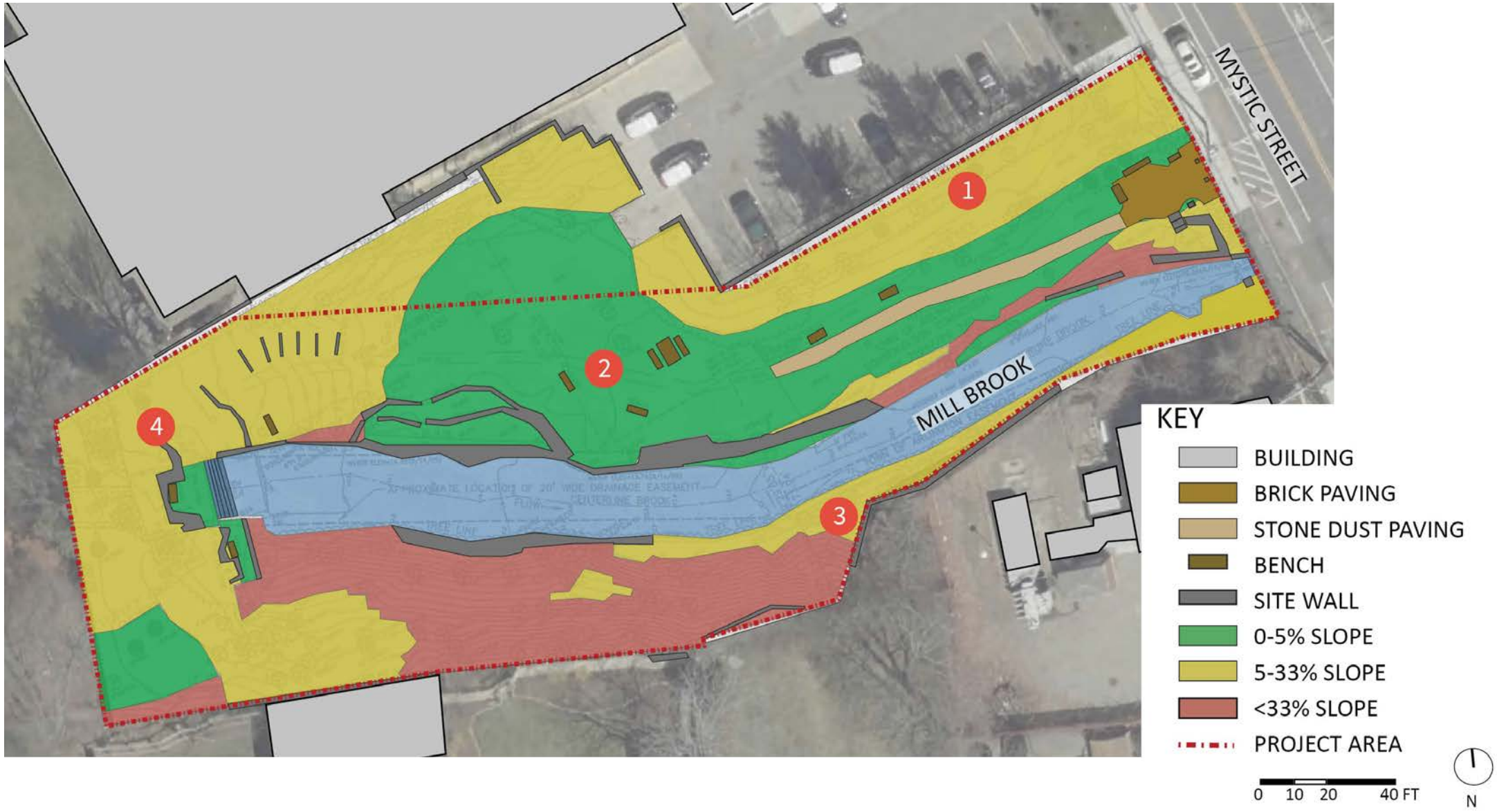
Project Location

Property Lines



Existing Conditions Plan

Site Slope Plan



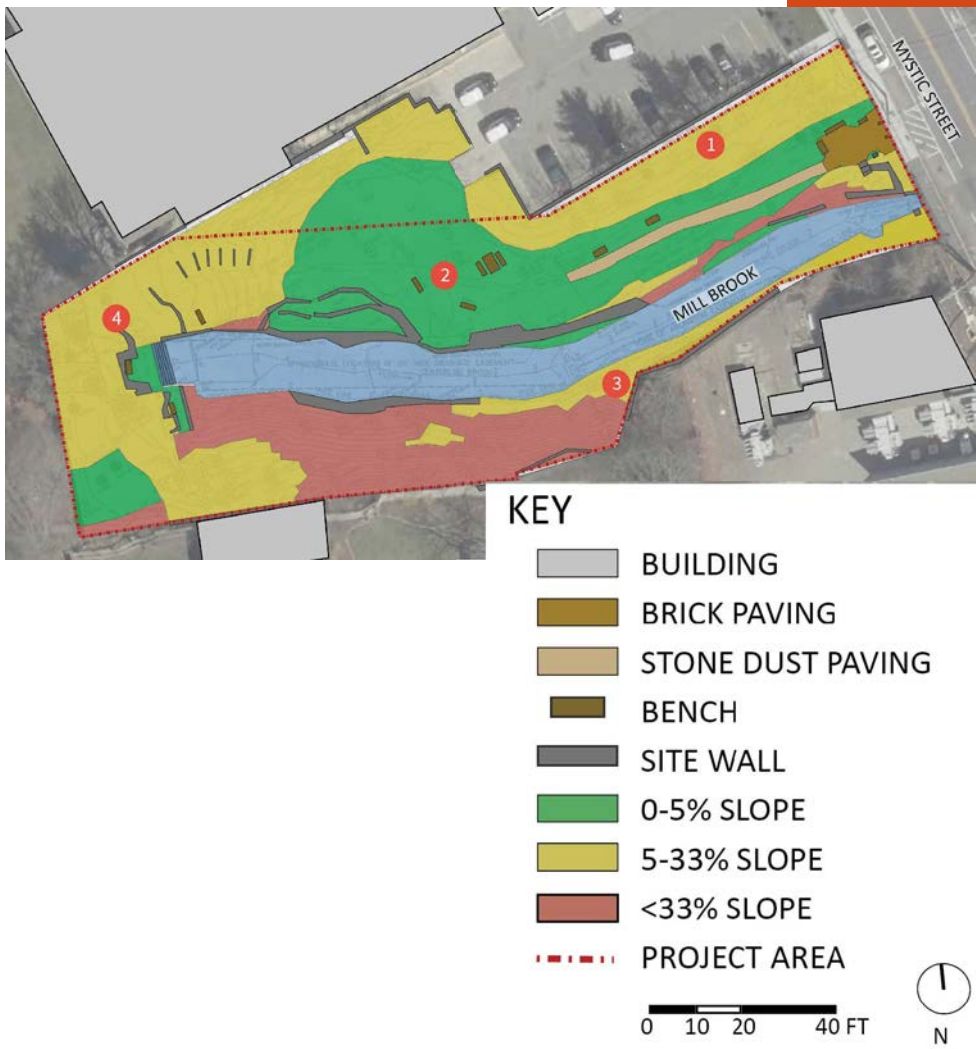
Site Slope Photos

1 Parking Lot Boundary

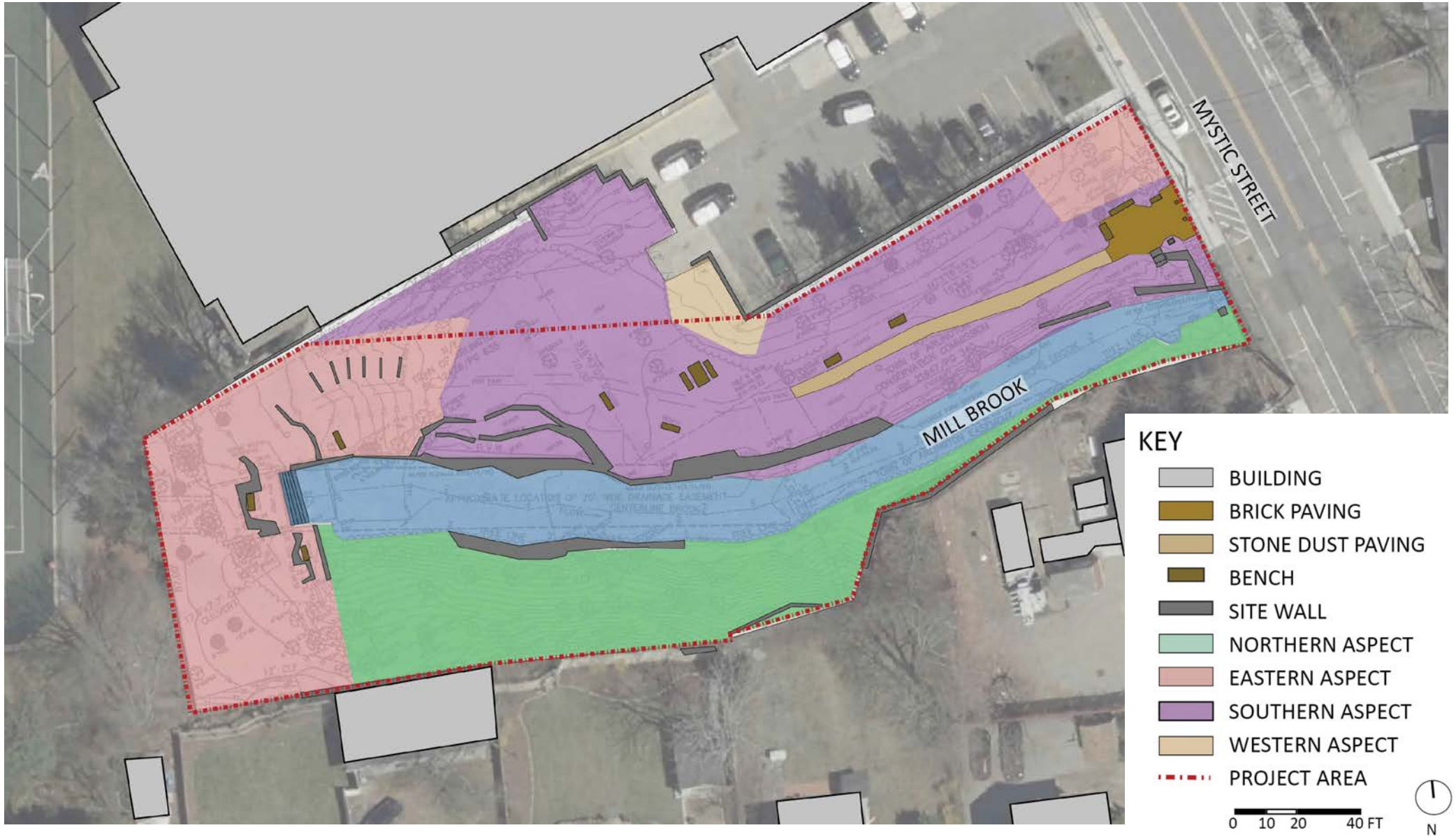
3 Steep Slope (South)

2 Level Path Area within Floodplain

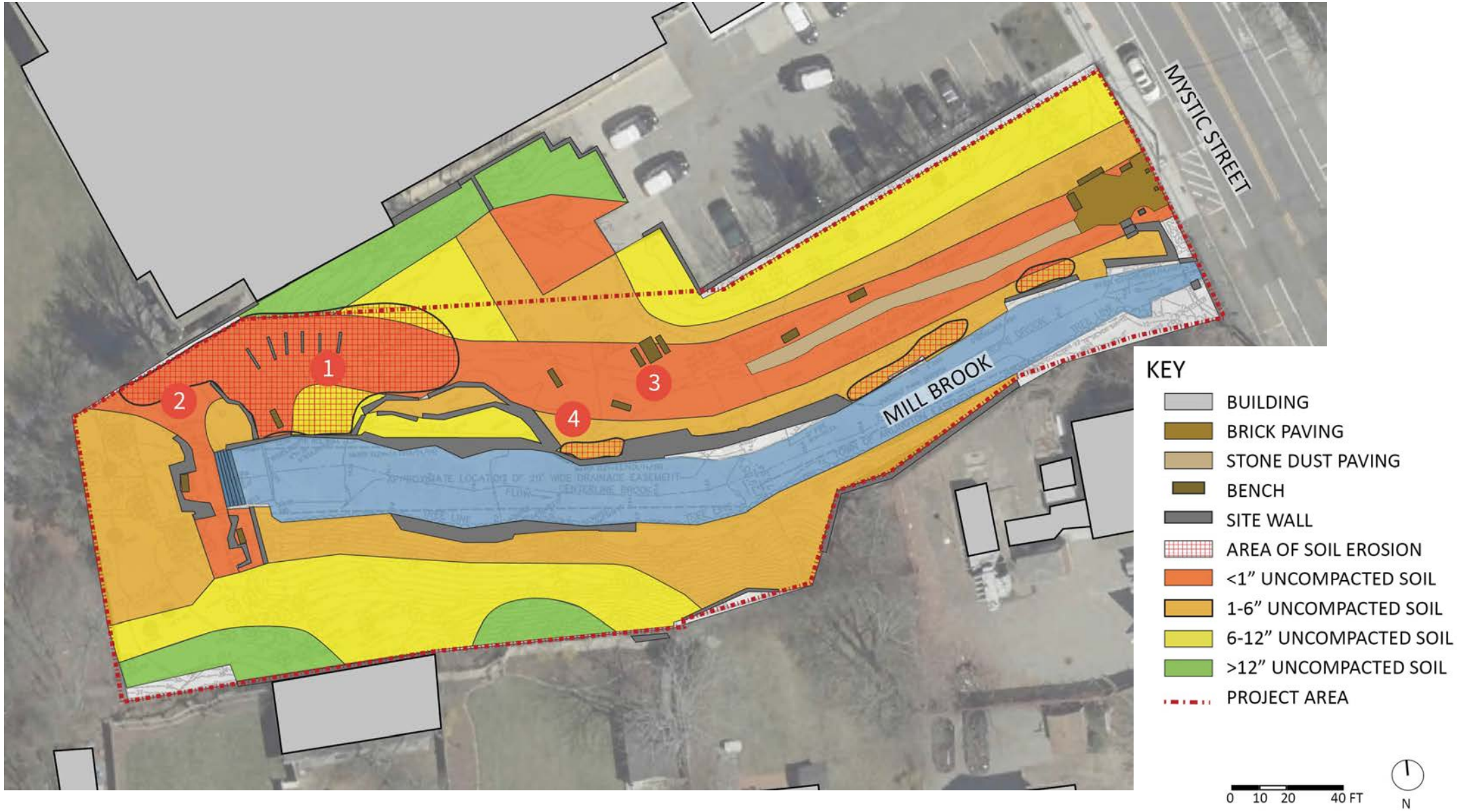
4 Flat Area Above Falls



Slope Aspect Plan



Soil Compaction & Erosion Plan



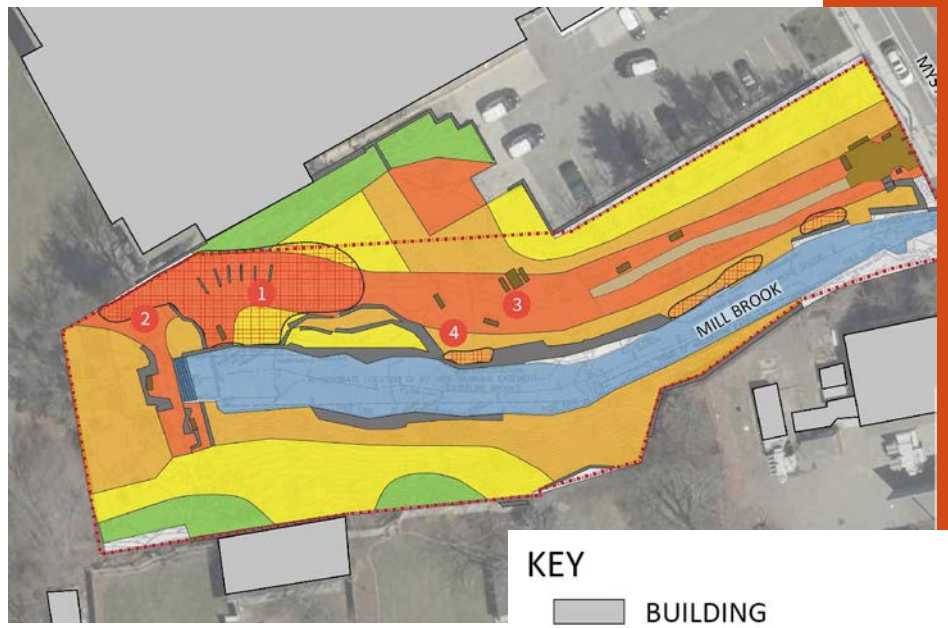
Soil Compaction & Erosion Photos

1 Granite Treads Near Field

2 Top of Slope at Falls

3 Surface Runoff

4 Erosion and Soil Settlement along Mill Brook



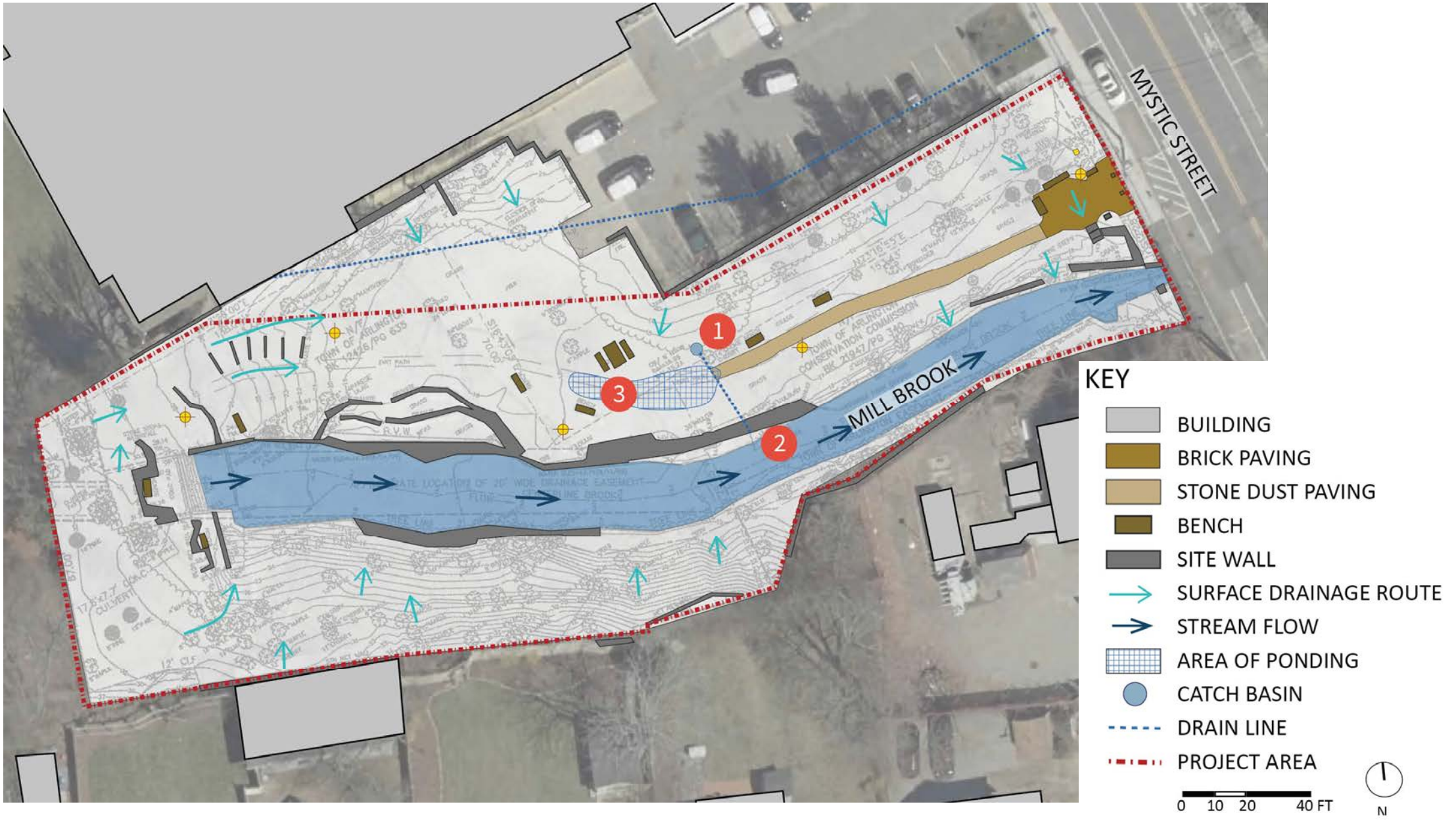
KEY

- BUILDING
- BRICK PAVING
- STONE DUST PAVING
- BENCH
- SITE WALL
- AREA OF SOIL EROSION
- <1" UNCOMPACTED SOIL
- 1-6" UNCOMPACTED SOIL
- 6-12" UNCOMPACTED SOIL
- >12" UNCOMPACTED SOIL
- PROJECT AREA

0 10 20 40 FT

N

Surface Hydrology

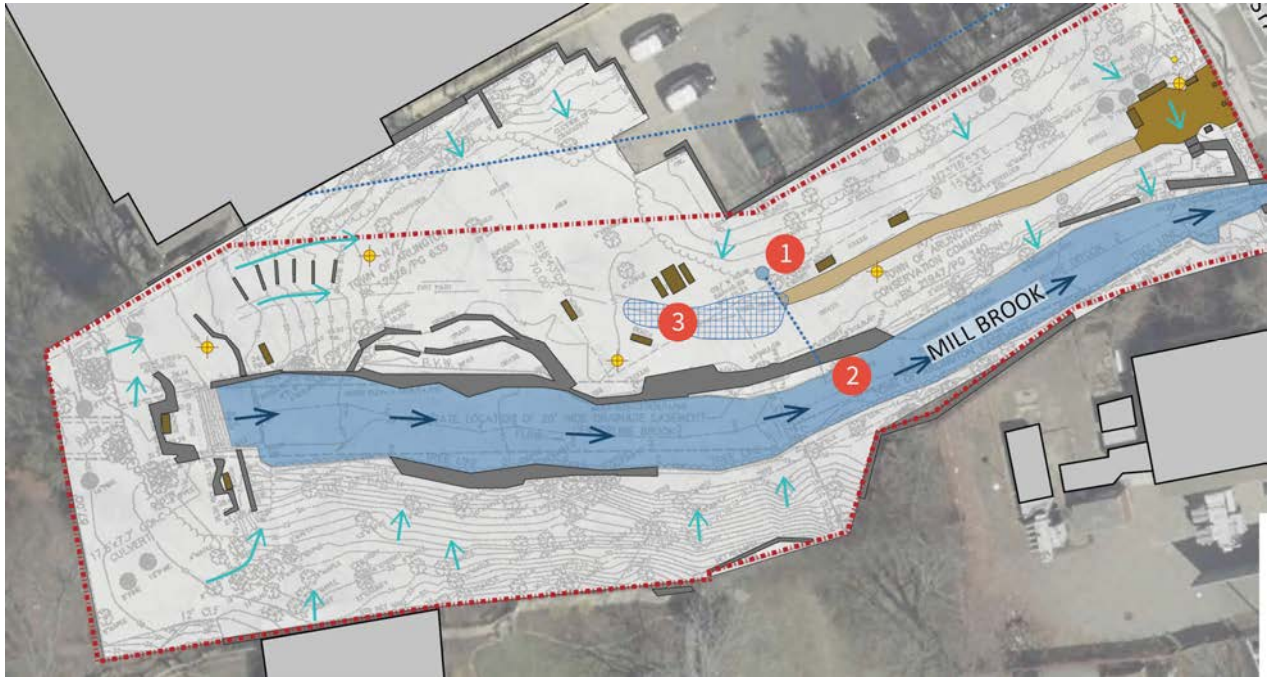


Surface Hydrology

1 Swale Between Path and Parking Lot Edge

2 Swale Catch Basin Pipe Outfall to Brook

3 Ponding and Surface Runoff Near Picnic Table



KEY

- BUILDING
- BRICK PAVING
- STONE DUST PAVING
- BENCH
- SITE WALL
- SURFACE DRAINAGE ROUTE
- STREAM FLOW
- AREA OF PONDING
- CATCH BASIN
- DRAIN LINE
- PROJECT AREA

0 10 20 40 FT

N

Native Vegetation


American Basswood - Leaves


American Basswood - Bark


Slippery Elm - Leaves


Black Cherry - Leaves


Black Cherry - Bark


Mountain Laurel


White Pine - Needles


White Pine - Growth Form


Slippery Elm - Bark

Invasive Vegetation


Garlic Mustard - MIPAG Invasive


Japanese Knotweed -MIPAG Invasive


Bittersweet - MIPAG Invasive


Bittersweet - Berries


Norway Maple - MIPAG Invasive


Norway Maple - Bark


Amur Honeysuckle - MIPAG Potentially Invasive


Buckthorn - MIPAG Invasive


Black Locust - MIPAG Invasive


Black Locust - Bark

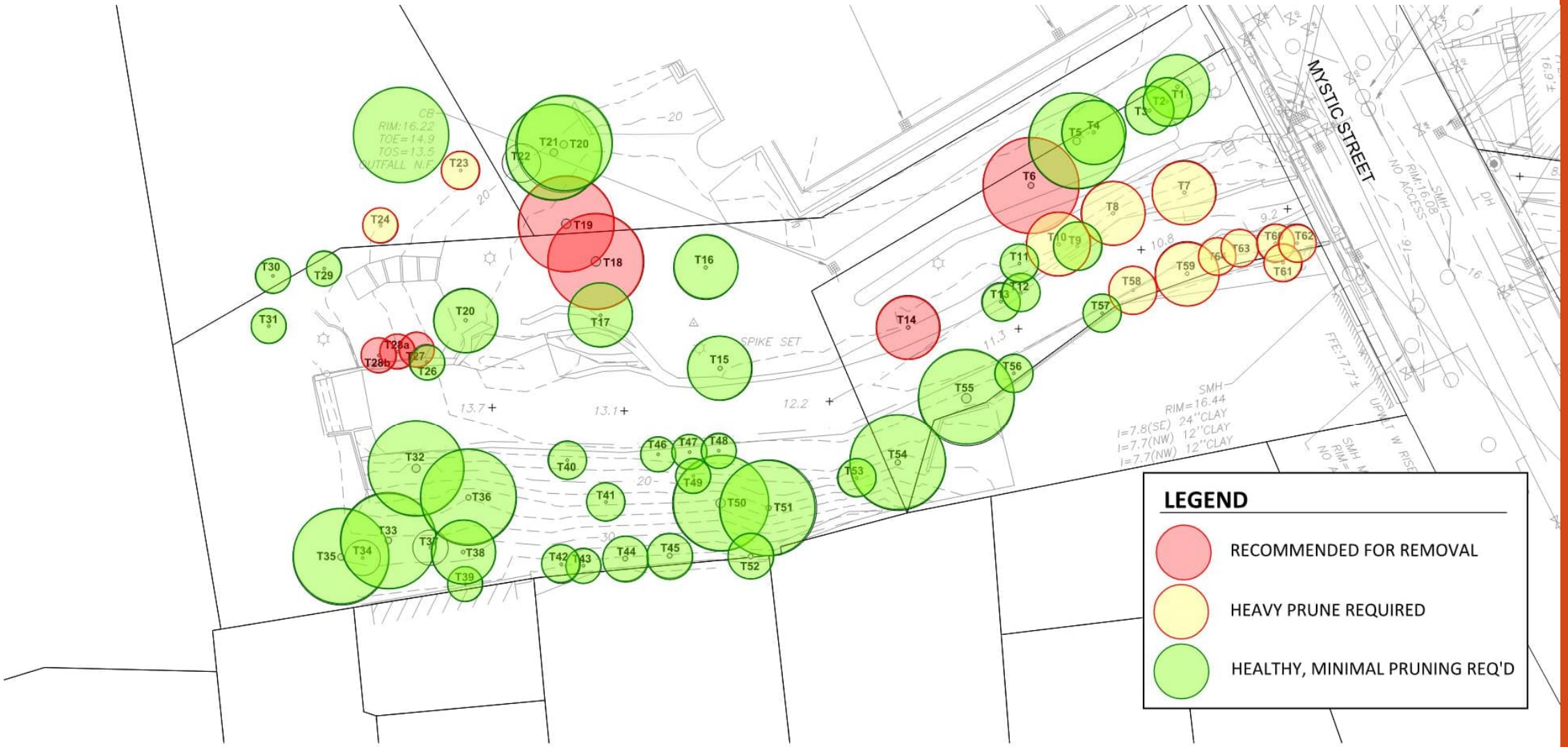

Multiflora Rose - MIPAG Invasive


Mulberry - MIPAG Evaluated

Tree Assessment Overview

- Trees 6” and above were assessed (68 Total).
- 7 Trees recommended for removal (Hazards).
- 12 Trees require significant pruning to remove wisteria vine and hazardous leaders.
- 38% of all trees (>6”) are state-listed invasive species.

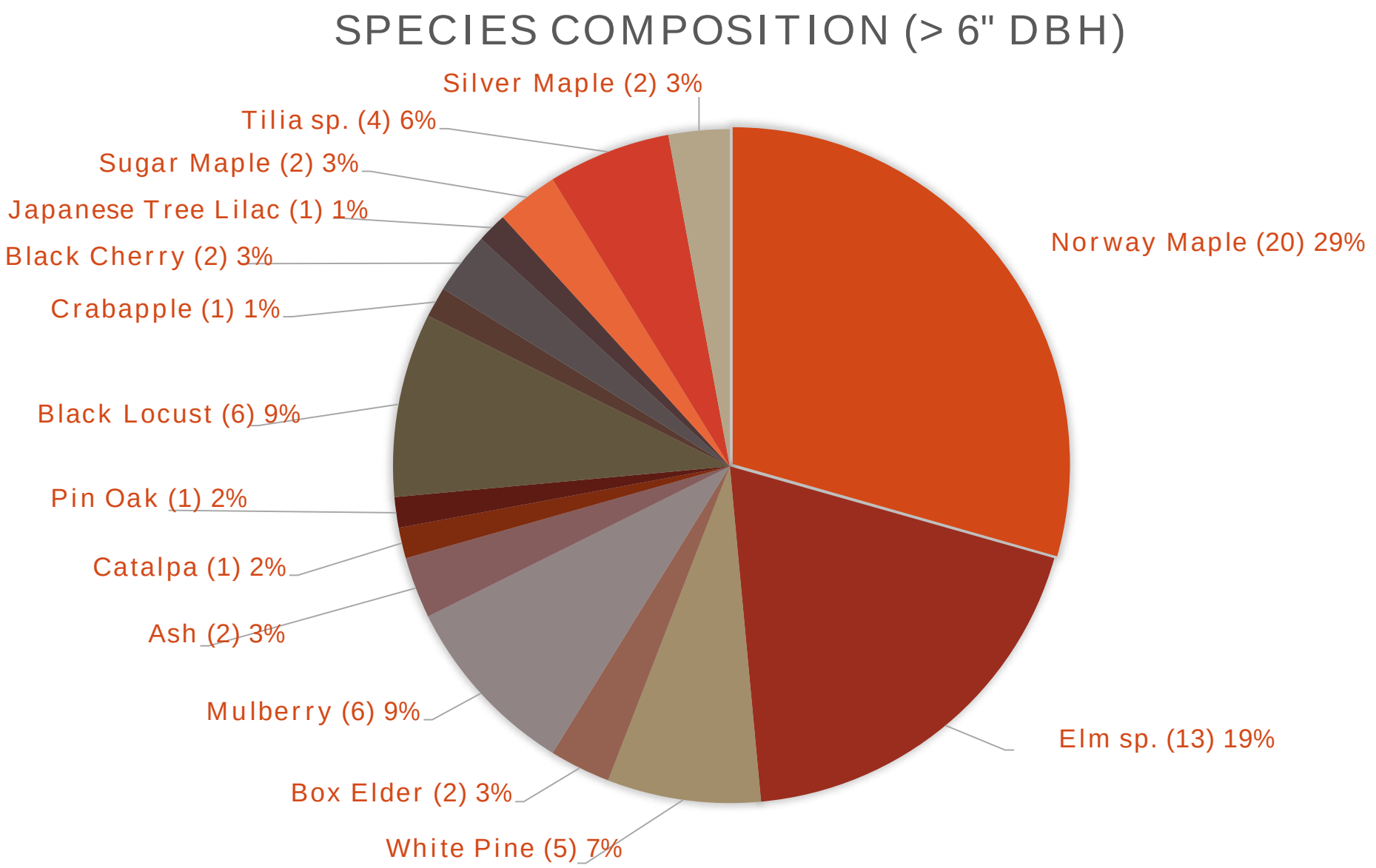
Tree Assessment Plan



COOKE'S HOLLOW

TREE ASSESSMENT KEY PLAN

Vegetation – Tree Statistics



Existing Conditions Photos

1 Dedication Plaque

2 Entry Brick and Piers

3 5’ Wide Path and Benches

Existing Conditions Photos

4 Granite Treads

5 Granite Retaining Edge

6 Chain Link Fence at SW Corner

Existing Conditions Photos

7 View of the Falls

8 Stacked Granite Curb

9 Terraced Granite Curb

Site Entrance Enlargement Plan

1 Memorial Plaque

3 Granite Benches

2 Granite Entry Piers & Paving

4 Granite Boulder Wall

Site Entrance Enlargement Plan

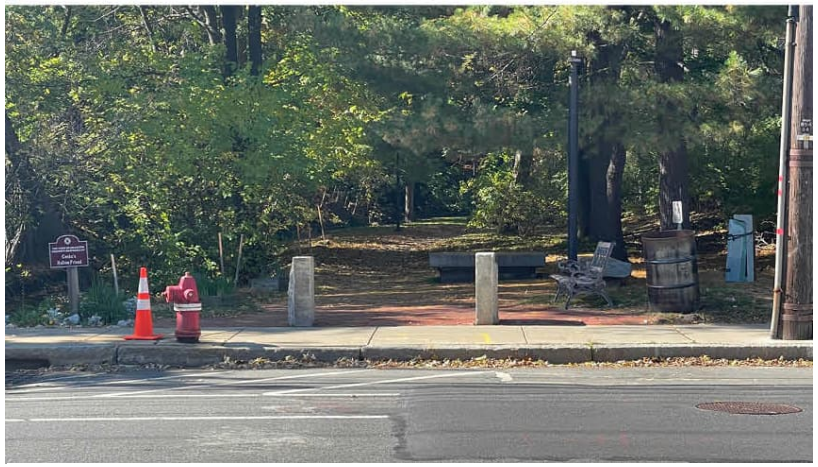
5 Entrance Plantings

7 Electrical Meter

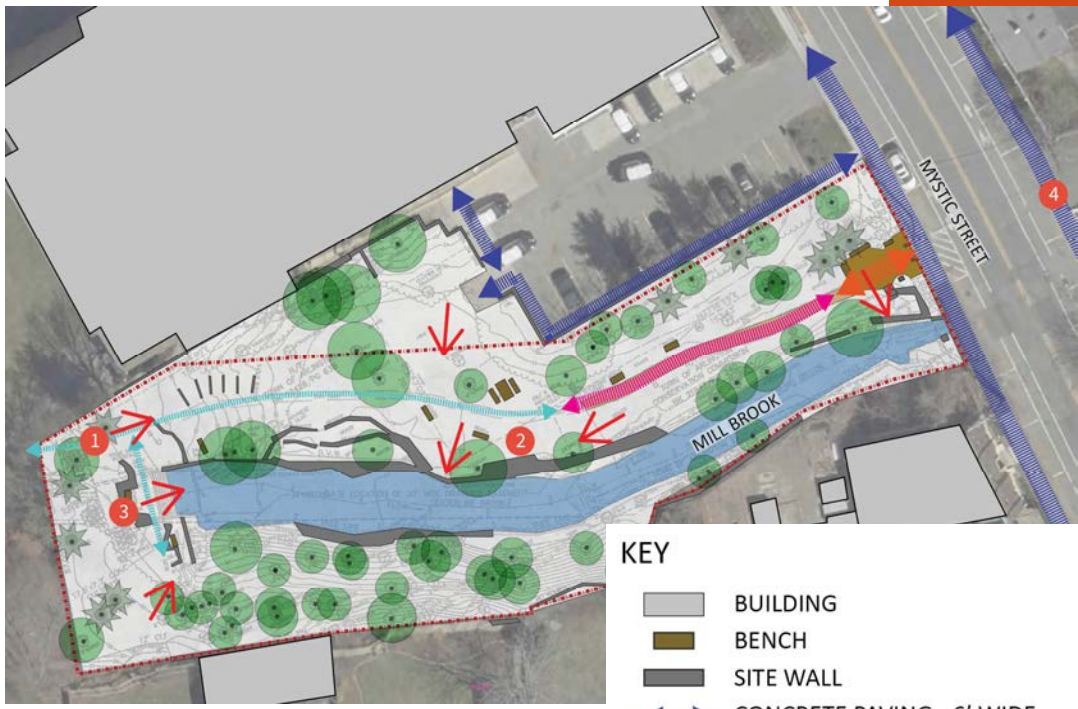
6 Granite Bench & Dog Sign

8 Brick to Stonedust Transition

Circulation and Views



Entrance View from Mystic Street



From Field Entrance Towards Mystic Street

From Top of Falls Towards Mystic Street

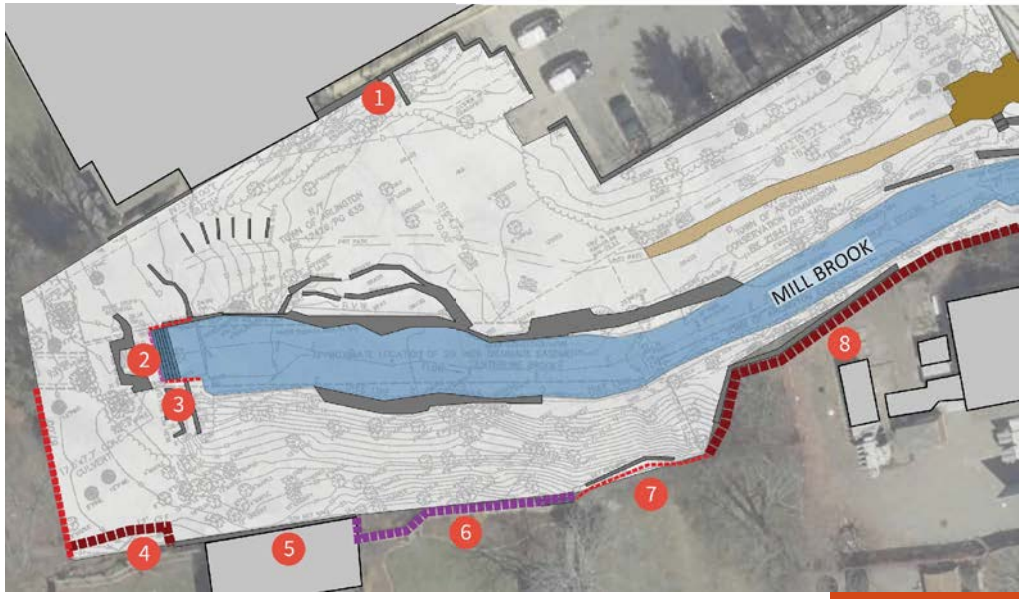
Fencing and Edge Conditions

1 Cusack Terrace Wall and Railing

2 Steel and Wooden Railing at Top of Falls

3 Black Chain Link Fence at Sides of Falls

4 Galvanized Chain Link Fence at Field



Fencing and Edge Conditions

5 Stone Wall and Building

6 Privacy Fence

7 6’ Chain Link Fence

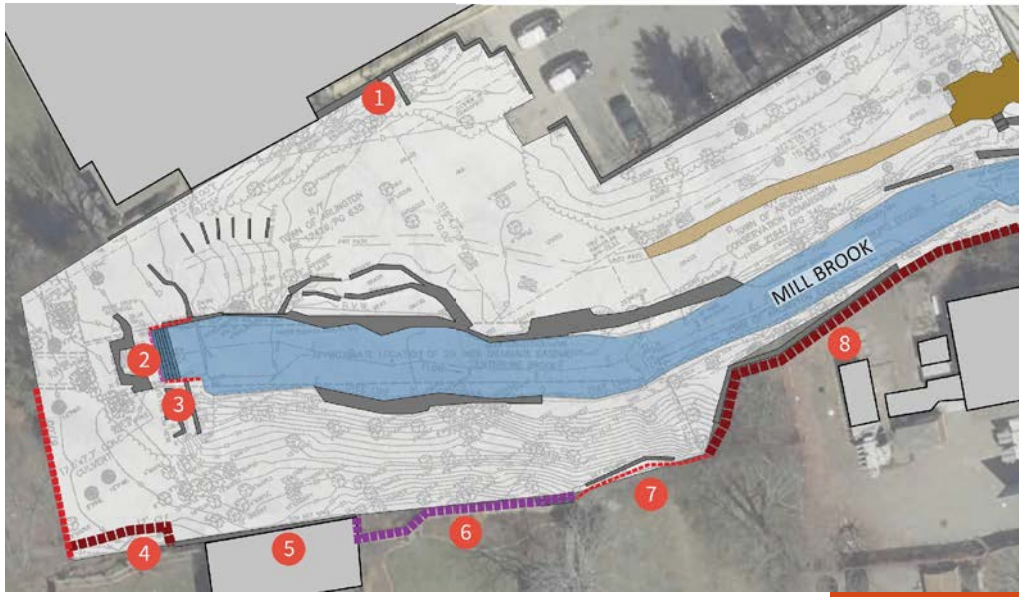
8 12’ Chain Link Fence & Wall

KEY

- BUILDING
- BRICK PAVING
- STONE DUST PAVING
- BENCH
- SITE WALL
- 12’ HT CHAIN LINK FENCE
- 8’ HT CHAIN LINK FENCE
- 6’ HT CHAIN LINK FENCE
- 6’ HT VINYL PRIVACY FENCE
- WOODEN GUARDRAIL

0 10 20 40 FT

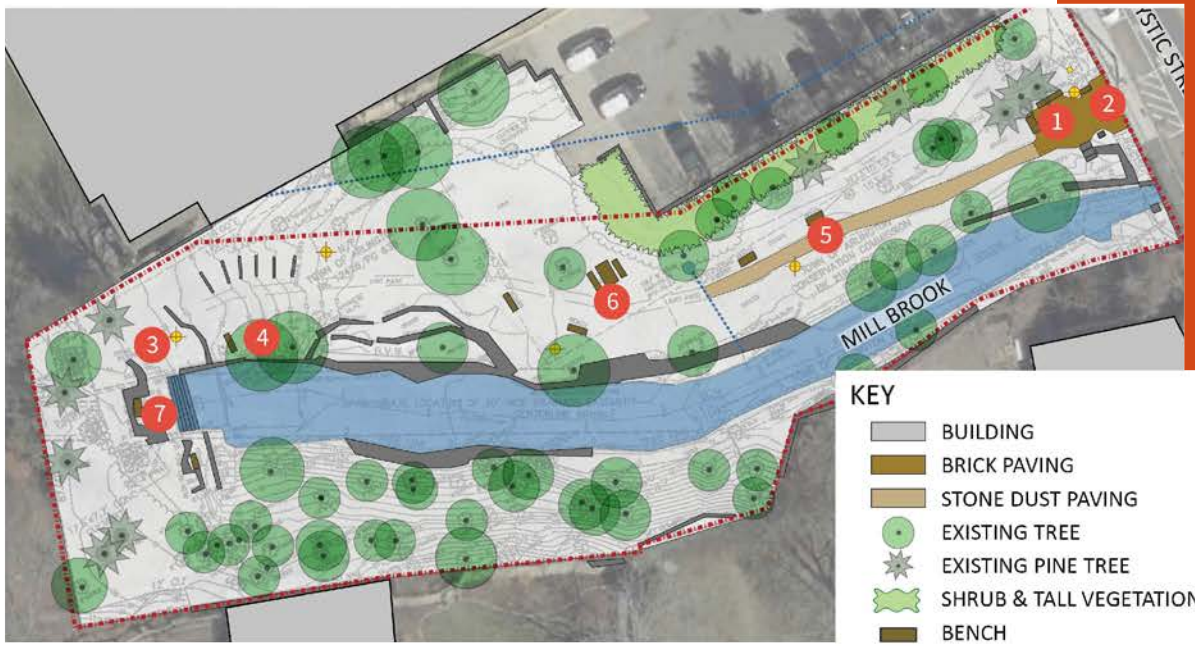
N

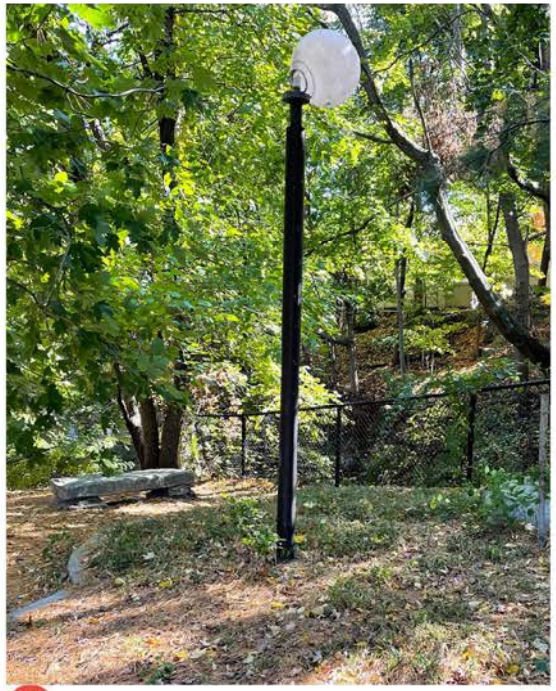


Site Furnishings

1 Granite Benches

2 Memorial Bench





3 Globe Light Fixture

4 Granite Bench

5 Wooden Bench

6 Picnic Table

7 Granite Bench Above Falls

May Block Party Feedback

- Historic significance needs to be factored into the design
  - Cpt. George Cooke built first water mill 1637.
  - Last of (9) dams once present in Arlington.
- Valued meditative/contemplative space.
- Sound of running water should be buffered/amplified.
- A place to cool off in the summer (unique microclimate).
- Place to eat lunch or take a break during the workday.
- Frequented route for recreation walks/walking dogs.
- Great location to spectate/enjoy various wildlife (including ducks, heron, jays, possums, river herring).

Design Goals and Objectives

Formulate design approach based on site analysis data and community feedback, including:

1. Improve park circulation and universal accessibility.
2. Enhance park aesthetic and maintain historic character.
3. Improve perimeter buffers and preserve natural feel/sense of place.
4. Unified aesthetic of site furnishings (signage, lighting, benches, etc.).
5. Address dominant invasive tree canopy.
6. Add native plantings and improve wildlife habitat.
7. Evaluate opportunities for green infrastructure and drainage improvements to mitigate the effects of flooding and climate change especially extreme heat .

Review of Challenging Site Features

- Narrow Pedestrian Corridor.
- Steep Slopes and Potential for Erosion.
- Steep Slopes Regarding ADA Compliance.
- North-facing Slope Aspect and Microclimate Conditions.
- Localized Flooding.
- Dominant Invasive Tree Canopy.

Preliminary Concept Design Elements

1. Park Entrance and Site Furnishings
2. Circulation, Pathways and Accessibility
3. Seating Area Above the Falls
4. Signage
5. Site Lighting
6. Stormwater Management
7. Invasive Plant Management
8. Native Plantings & Restoration
9. Noise and Light Abatement

1. Park Entrance and Site Furnishings

Park Entrance and Site Furnishings - Concept Elements

Alternative 1 (Nature-based)

- Less “formal” entrance; replace brick with utilitarian material.
- Keep granite pillars.
- Relocate seating area/stone benches to “contemplative space closer to falls”.
- Recharacterize raised planter; memorial to remain.
- Add bike rack at entrance.
- Replace trash receptacle.

Alternative 2 (Traditional)

- Keep benches/seating area, granite pillars; add bike rack(s).
- Rehabilitate brick surface at entrance to meet ADA-compliance.
- Create formal entrance at ACHS field.
- Add bottle filling station with pet fountain near main entrance.
- Add more picnic tables and seating options within park.
- Memorial to remain.

Entrance and Site Furnishings

Mystic Street Entrance

Accessible Picnic Table

Hydration Station

2. Pathways and Accessibility

Pathways and Accessibility - Concept Elements

Alternative 1 (Nature-based)

- Existing path width (5’-0”) to remain.
- Provide ADA-compliant path to base of falls; non-compliant path to ACHS athletic fields.
- Redesign benches and picnic tables for accessibility.
- Less formal open connection to field.

Alternative 2 (Traditional)

- Expand path width to 6’-0”.
- Provide ADA-compliant path to ACHS athletic fields.
- Redesign benches and picnic tables for accessibility.
- Stepped path extension toward field.

Accessibility Guidelines – Trails vs. Paths

Trails

1. Comply with Forest Service Trail Accessibility Guidelines (FSTAG).
2. Maximum Slopes can be greater than 5% for shorter distances (as show below).
3. Surface material must be firm and stable.

Pathways

1. Comply with Americans with Disabilities Act Accessibility Standards (ADA).
2. Maximum permitted slope of 5.0%.
3. Surface material must be firm and stable.

Table 7.4.3.1 Trail Running Slope (Grade) and Resting Intervals

Running Slope of Trail Segment		Maximum Length of Segment Between Resting Intervals
Steeper Than	But Not Steeper Than	
1:20 (5 percent)	1:12 (8.33 percent)	200 feet (61 m)
1:12 (8.33 percent)	1:10 (10 percent)	30 feet (9 m)
1:10 (10 percent)	1:8 (12 percent)	10 feet (3050 mm)

Accessibility

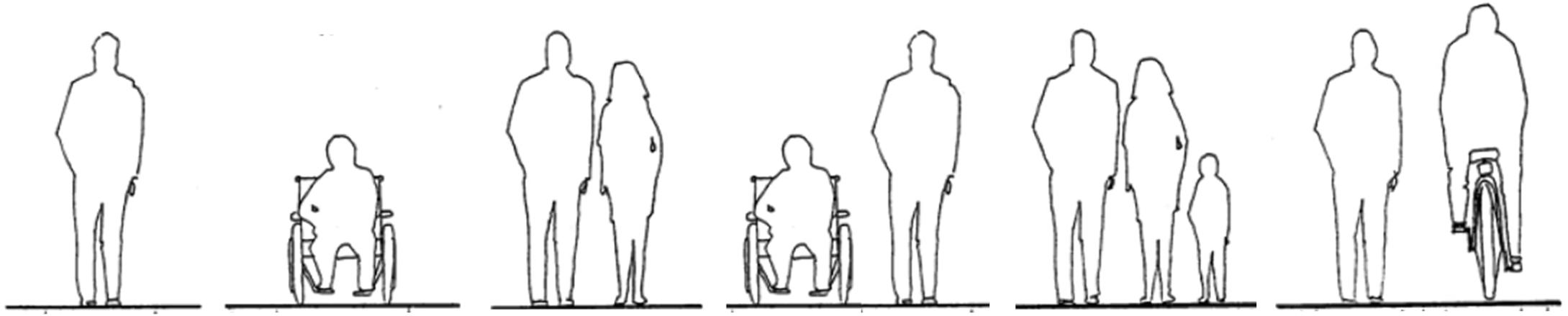
Eroded Stairs from Field

Upper Entrance toward Field

Circulation and Proposed Alignments

1. Aim to achieve proposed alignments that keep pathway surface under 5% slope to top of falls.
2. If 5% slope cannot be achieved, consider ramp system.
3. Pursue layouts and alignments that limit impacts on the resource areas.
4. Consider materials, alignments and construction techniques that will be more resilient to flooding and effects of climate change.

Considering Path Widths



2’-6”
Single
Pedestrian

3’-0”
Single
Wheelchair

4’-6”
Two
Pedestrians

5’-6”
Pedestrian &
Wheelchair

6’-3”
Three
Pedestrians

6’-6”
One Pedestrian
One Bicycle

Pathway Surfacing Alternatives

Porous Bituminous Concrete

1. ADA-compliant
2. Cost: Low
3. Maintenance: Medium
4. Local Examples:
   - Wellington Park
   - Perimeter Road, Fresh Pond Reservation, Cambridge

Flexible Porous Paving

1. ADA-compliant
2. Cost: High
3. Maintenance: Medium
4. Local Examples:
   - Spy Pond Park, Arlington
   - Kingsley Park & Black's Nook Pond, Fresh Pond Reservation

Timber Boardwalk

1. ADA-compliant
2. Cost: High
3. Maintenance: Replacement
4. Local Examples:
   - Wellington Park
   - Spy Pond Park, Arlington

Pathway Surfacing Alternatives (contd)

Bituminous Concrete

1. **ADA-compliant**
2. **Cost: Low**
3. **Maintenance: Low**
4. **Issues:**
   - Not porous and would not help to reduce heat-island effect or effects of flooding

Stabilized Aggregate

1. **ADA-compliant**
2. **Cost: Medium**
3. **Maintenance: Medium**
4. **Issues:**
   - Not porous.
   - Performs poorly in areas prone to flooding.
   - Performs poorly in areas of dense shade.
   - Performs poorly on steeper slopes.

3. Noise and Light Abatement

Noise and Light Abatement – Concept Elements

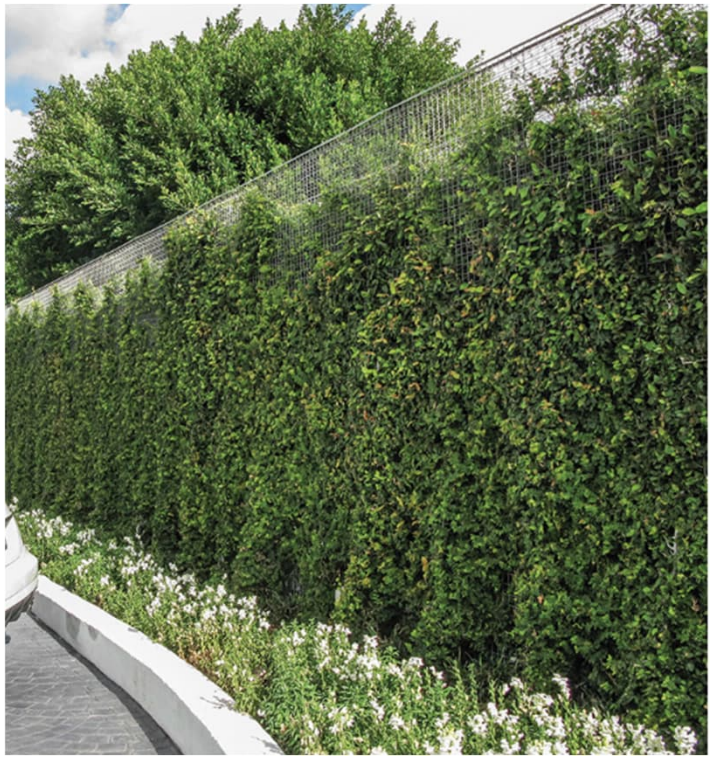
Alternative 1 (Nature-based)

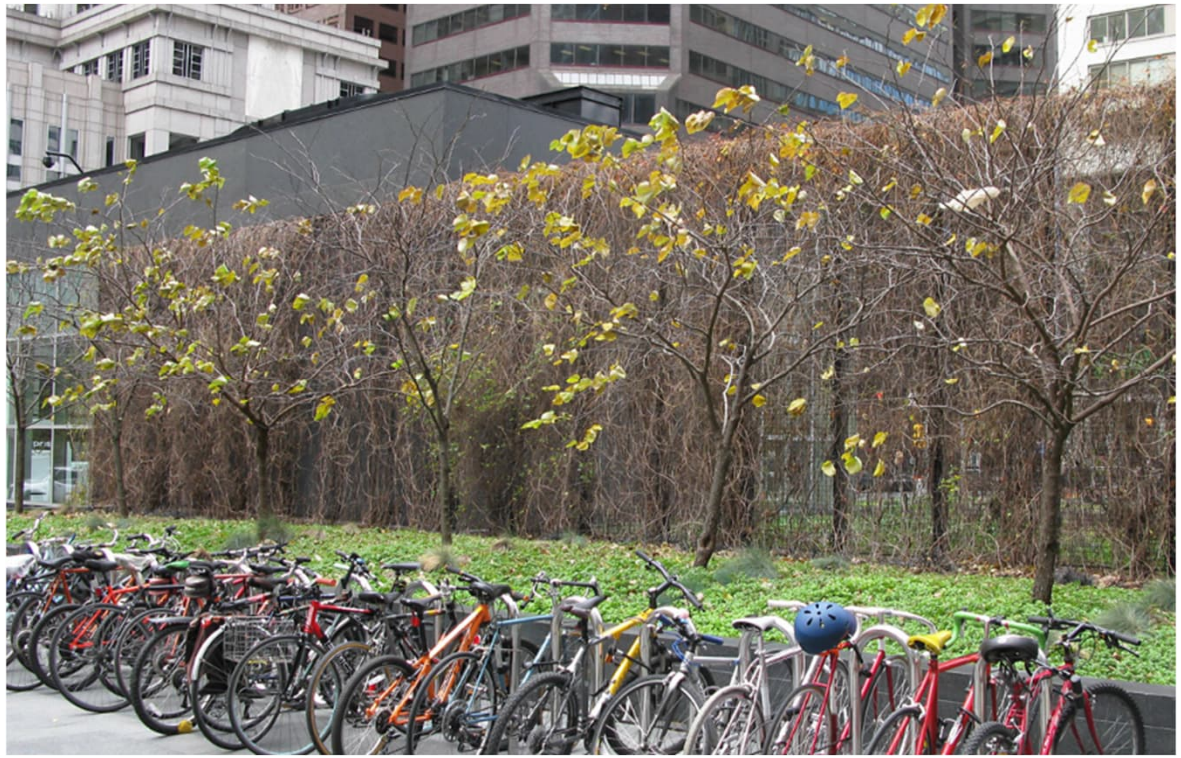
- Incorporate “green walls” with existing retaining walls.
- Plant evergreen species adjacent to parking lot and retaining walls.
- Reduce/redirect glare from existing wall and parking lot lights.

Alternative 2 (Traditional)

- Incorporate “green walls” with existing retaining walls.
- Plant evergreen species adjacent to parking lot and retaining walls.
- Add opaque fence along Eversource building.

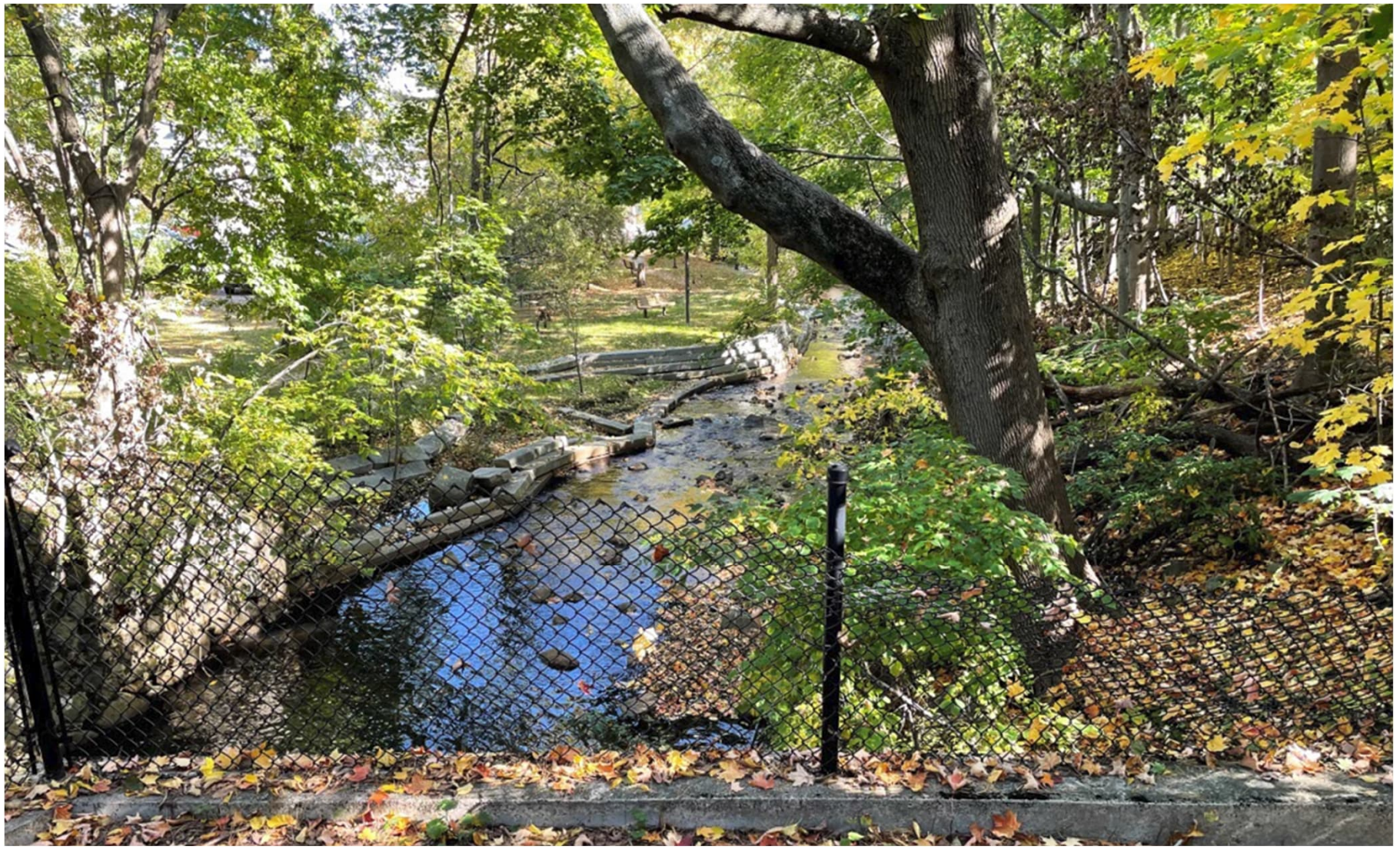
Noise and Light Abatement





Green Screens

4. Seating Area Above the Falls



Seating Area Above the Falls – Concept Elements

Alternative 1 (Nature-based)

- Replace railing with contemporary style.
- Remove invasives; replace with native understory plantings.
- Remove existing chain link fence on western property line.

Alternative 2 (Traditional)

- Replace railing with historic style.
- Enlarge ADA compliant seating area.
- Remove invasives; keep existing understory plantings.
- Replace existing chain link fence on western property line.

Railing and Stone Bench

Stone Bench Nook

5. Signage


COOKE'S HOLLOW
DEDICATED OCTOBER 19, 1974
ARLINGTON'S HISTORY STARTED HERE. IN 1637, THE FIRST SETTLER IN THE AREA, CAPT. GEORGE COOKE, BUILT A DAM AND A GRIST MILL, ONE OF THE FIRST IN NEW ENGLAND TO OPERATE BY WATER POWER. THE VILLAGE OF MENOTOMY (NOW ARLINGTON) DEVELOPED AROUND THE BROOK AND THE MILL.
IN 1967, THE ARLINGTON GARDEN CLUB AND THE ARLINGTON CONSERVATION COMMISSION BEGAN THE DEVELOPMENT OF A PARK AT MILL BROOK NEAR THE SITE OF THE GRIST MILL. FUNDS CAME FROM PUBLIC AND PRIVATE ORGANIZATIONS AND HUNDREDS OF INDIVIDUAL DONORS. AN ARLINGTON SCHOOLGIRL, MARTHA A. QUIGLEY, SUGGESTED THE NAME, COOKE'S HOLLOW. THE PARK RECEIVED A NATIONAL AWARD IN 1970 FOR COMMUNITY ACHIEVEMENT IN ENVIRONMENTAL IMPROVEMENT.
COMPLETE, IN ITSELF, COOKE'S HOLLOW IS ALSO THE FIRST SECTION OF A LINEAR PARK PLANNED TO CONTINUE ALONG MILL BROOK.

Signage – Concept Elements

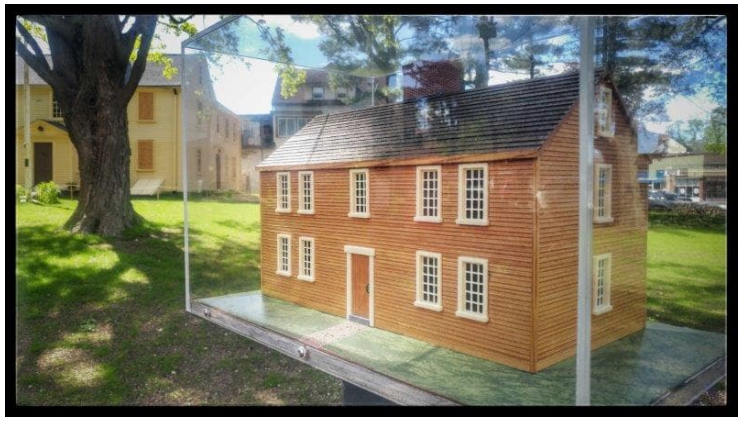
Alternative 1 (Nature-based)

- Subdued sign at entrance (granite engraving with black lithochrome).
- Limit new signage to Mystic Street entrance.
- Consider “digital” signage thru phone app.

Alternative 2 (Traditional)

- Add signage to supplement mill history.
- Consider interpretive historic element (at entrance) like mill in a box.
- Add formal park signage at ACHS entrance (inc. Buzzell Field and corridor path system).

Signage and Interpretive Examples



Plexiglass encased model of the mill

National Parks sign stand

Interpretive engravings

6. Site Lighting

Site Lighting – Concept Elements

Alternative 1 (Nature-based)

- No site lighting proposed within park.
- Consider supplemental lighting at entrance(s).

Alternative 2 (Traditional)

- Install pedestrian-based lighting (pole or bollard style) within park (energy efficient and on timers for seasonal use).

Site Lighting

***LED energy efficient and on timers for seasonal use**

LED Bollard

LED Pole Light

Existing Light Pole with White Globe

7. Stormwater Management

Stormwater Management – Concept Elements

Alternative 1 (Nature-based)

- Utilize porous paving for paths and permeable pavers at park entrance(s)
- Disconnect stormwater pipe to Mill Brook; rehabilitate bioretention swale to clean and store runoff.
- Amend existing soils to promote infiltration and reduce runoff..

Alternative 2 (Traditional)

- Amend existing soils to promote infiltration and reduce runoff.

Stormwater Management

Infiltration Swale Systems:

1. Green Infrastructure Practice
2. Improves Water Quality
3. Reduction in Surface Runoff and Sedimentation into Mill Brook

Permeable Pavers

Existing Swale along Parking Lot

8. Invasive Plant Management

Invasive Plant Management - Concept Elements

Alternative 1 (Nature-based)

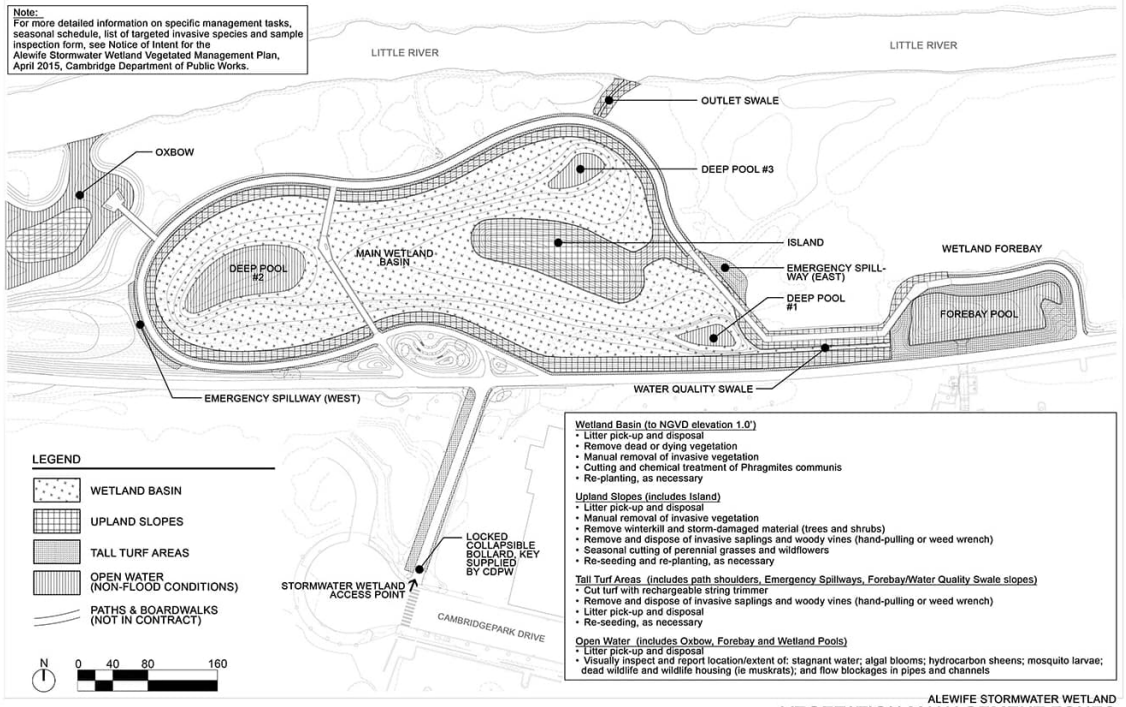
- Remove all state-listed invasive species, including mature black locust and Norway maple trees.
- Include phased approach to removals (Adaptive Management Strategies).

Alternative 2 (Traditional)

- Remove all state-listed invasive species, excluding all mature black locust and Norway maple trees.
- Limit invasive removals on steep bank and along Mill Brook.

Invasive Plant Management

1. Develop Vegetation Management Plan.
2. Target Existing Invasive Species.
3. Focus on Manual and Mechanical Techniques (Non-Chemical).
4. Work with Volunteers, Town Recreation and Public Works for Support.



9. Planting

Planting – Concept Elements

Alternative 1 (Nature-based)

- Based on Boston Basin Ecoregion plant communities.
- Straight species; no cultivars.
- Add buffer plantings to ACHS field.
- Buffer plantings/fence screening at Eversource building.
- Identify volunteer opportunities for planting/plant management.

Alternative 2 (Traditional)

- Add buffer plantings along ACSB parking lot edge.
- Add buffer plantings to ACHS field.
- Consider non-native climate adaptive species.
- Identify volunteer opportunities for planting/plant management.

Planting Strategy (Example)

1. Replicate Natural Communities Indigenous to Mystic River Watershed
2. Restoration of Riparian Floodplain Forest
3. Woodland Understory (Upland)
4. Natural Grassland Habitat (Upland)
5. Native, Non-cultivar Species
6. Highly Adaptive Plants–Minimize Maintenance

High-terrace Floodplain Forest

State Rank: S2 - Imperiled

High-terrace Floodplain Forest with mixed herbaceous layer and floodline visible on the nearest tree. Photo: Jennifer Kearsley, NHESP.

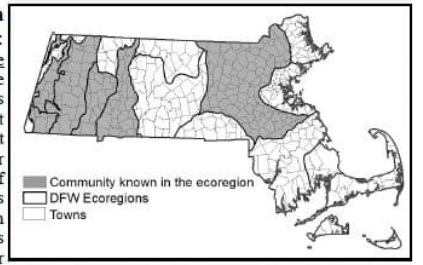
High-Terrace Floodplain Forests are deciduous hardwood forests that occur along riverbanks, above the zone of annual flooding. Although they do not flood annually, they flood often enough for the soil to be moderately enriched.

Description: High-terrace Floodplain Forests occur on raised banks adjacent to rivers and streams, on steep banks bordering high-gradient rivers in the western parts of the state, on high alluvial terraces, and on raised areas within major-river and small-river floodplain forests. In general, these communities are within the 100-year flood zone of rivers, so are river influenced, but they typically are not flooded annually as indicated by the presence of a distinct surface soil organic layer. Soils are typically silt loams. As with other types of floodplain forests and Rich, Mesic Forests, the rich soils and moist conditions make disturbed areas in them prone to invasions by exotic plant species.

Characteristic Species: These floodplain forests typically have species from lower floodplain forests mixed with species from mesic, upland forests. The canopy may include red, silver, and sugar maples, birches, hickories, ashes, butternut, sycamore, cottonwood, black cherry, basswood, and elms. An open subcanopy usually includes ironwood and canopy species. The shrub layer varies from sparse to well-developed with arrowwood, nannyberry, and winterberry commonly mixed with invasive non-native shrubs including multiflora rose, Japanese knotweed, Japanese barberry, and buckthorns. The herbaceous layer is a mixture of the characteristic floodplain forest plants - sensitive fern, ostrich fern, and wood-nettle - and rich upland herbs, such as lady fern, zigzag goldenrod, white snakeroot, jack-in-the-pulpit, and bellwort. Native and non-native vines can be very dense in places.

High-terrace Floodplain Forest with dense barberry patches in the otherwise diverse understory. Photo: Patricia Swain, NHESP.

Differentiating from Related Communities: Occurrences of High-terrace Floodplain Forests tend to be relatively small narrow forests on high alluvial terraces that flood only occasionally (not annually) and for a shorter duration than other types of floodplain forests. Less flooding typically results in more structural and species diversity than found in other floodplain forests. High-terrace Floodplain Forests are most closely related to the Transitional Floodplain Forests, Small-river Floodplain Forests, and Rich, Mesic Forests. They are sometimes seen as a hybrid between floodplain and upland forests as the vegetation composition of all layers of this forest type shares species with other floodplain forests and with Rich, Mesic Forests (for example, silver and red maple grow with sugar maple, ostrich fern with lady fern). They have more litter accumulated than other floodplain forests. Alluvial Red Maple Swamps along low-gradient rivers flood annually and are slow to drain. Silver maple is often a codominant with red maple. Alluvial Hardwood Flats are along small streams that have multiple short flooding events throughout the year after storms. Black cherry and white pine are usually abundant in the canopy with red maple, but not silver maple.



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High-terrace Floodplain Forest with diverse canopy and herbaceous layers. Photo: Michael Batcher.

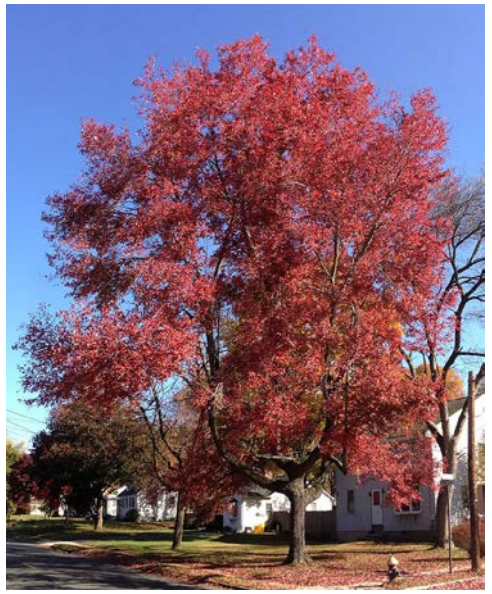
From: *Classification of Natural Communities of Massachusetts* http://www.mass.gov/nhesp/
Natural Heritage & Endangered Species Program, Division of Fisheries & Wildlife, 1 Rabbit Hill Rd., Westborough, MA 01581

Updated: 2016
(508) 389-6360

Riparian Floodplain Community

Canopy Trees

1. *Acer rubrum* (red maple)
2. *Quercus bicolor* (swamp white oak)
3. *Betula nigra* (river birch)
4. *Ulmus americana* (American elm)



Riparian Floodplain Community

Shrubs and Groundcovers

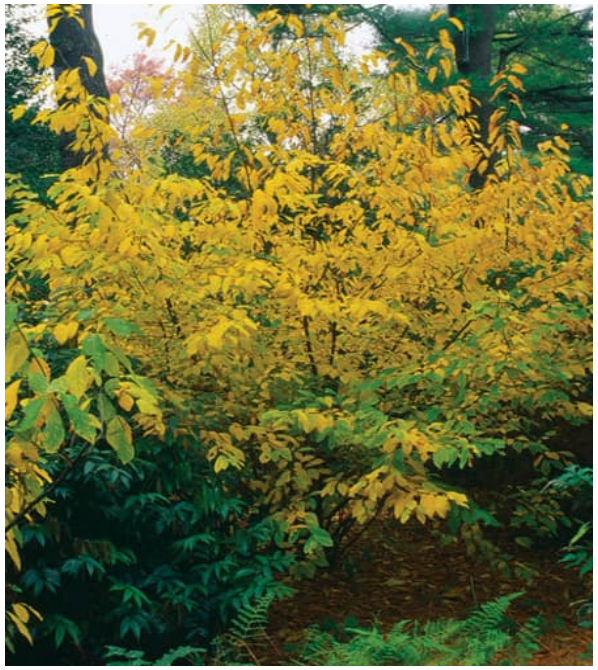
1. *Lindera benzoin* (spicebush)
2. *Cornus amomum* (silky dogwood)
1. *Ilex verticilata* (winterberry)
2. *Viburnum dentatum* (arrowwood)
3. *Spiraea alba* (meadowsweet)
4. *Clethra alnifolia* (summersweet)
5. *Onoclea sensibilis* (sensitive fern)






Woodland Understory – Trees/Shrubs

1. *Cornus florida* (flowering dogwood)
2. *Lindera benzoin* (spicebush)
3. *Cornus racemosa* (gray dogwood)
4. *Viburnum dentatum* (arrowwood)
5. *Hamamelis virginiana* (witchhazel)



Woodland Understory - Groundcovers

1. **Carex pennsylvanica** (Pennsylvania sedge)
2. *Tiarella cordifolia* (foamflower)
3. *Asarum canadensis* (Canadian wild ginger)
4. **Eurybia divaricata** (white wood aster)
5. *Dryopteris marginalis* (marginal woodfern)
6. *Pteridium aquilinum* (bracken fern)

Next Steps

1. June 23, Public Meeting #2 Feedback Deadline
2. June/July, Develop (2) Concept Plans
3. Mid-July, Public Meeting #3 (Concept Plans)
4. Late July, Submit Feasibility/Preliminary Design Report to the Town (Site Analysis and Concept Alternatives)

THANK YOU! Please provide feedback

- **Town of Arlington Contact:**
  DMORGAN@TOWN.ARLINGTON.MA.US

- **For more information and a project survey visit:**

Town Plans to Revitalize Cooke's Hollow | Planning News and Notices | Town of Arlington (arlingtonma.gov)

https://www.arlingtonma.gov/Home/Components/News/News/13341/2651?backlist=%2fdepartments%2fplanning-community-development

APPENDICES

Cooke's Hollow
Feasibility Study and Preliminary Design

Public Meeting #3

Town of Arlington, MA

August 4, 2023

HATCH

Agenda

1. **Project Overview**
   - Project Team
   - Overview of Previous Public Meetings
   - Project Timeline

2. **Presentation**
   - Preliminary Concept Alternatives (2)

3. **Community Feedback**
   - Public Discussion and Comment

4. **Closing Remarks + Next Steps**

Project Team

- **David Morgan (Town Of Arlington) –** Town Project Manager
- **Duke Bitsko (Hatch) -** Director of Design
- **Andrew Keel (Hatch) -** Landscape Architect + Project Manager
- **Stakeholders:**
  - Arlington Conservation Commission
  - Cusack Terrace Residents
  - Arlington Police Department
  - Eversource
  - Arlington Garden Club
  - Neighbors
  - Arlington Catholic High School River

Questions and Comments

Please take notes and save questions and comments for discussion following the presentation.

We will have a plan view screen share to help facilitate feedback and document comments.

Thank You!

How to provide feedback

- This presentation will be recorded and posted on the Town website.

- Town of Arlington Contact:

dmorgan@town.arlington.ma.us

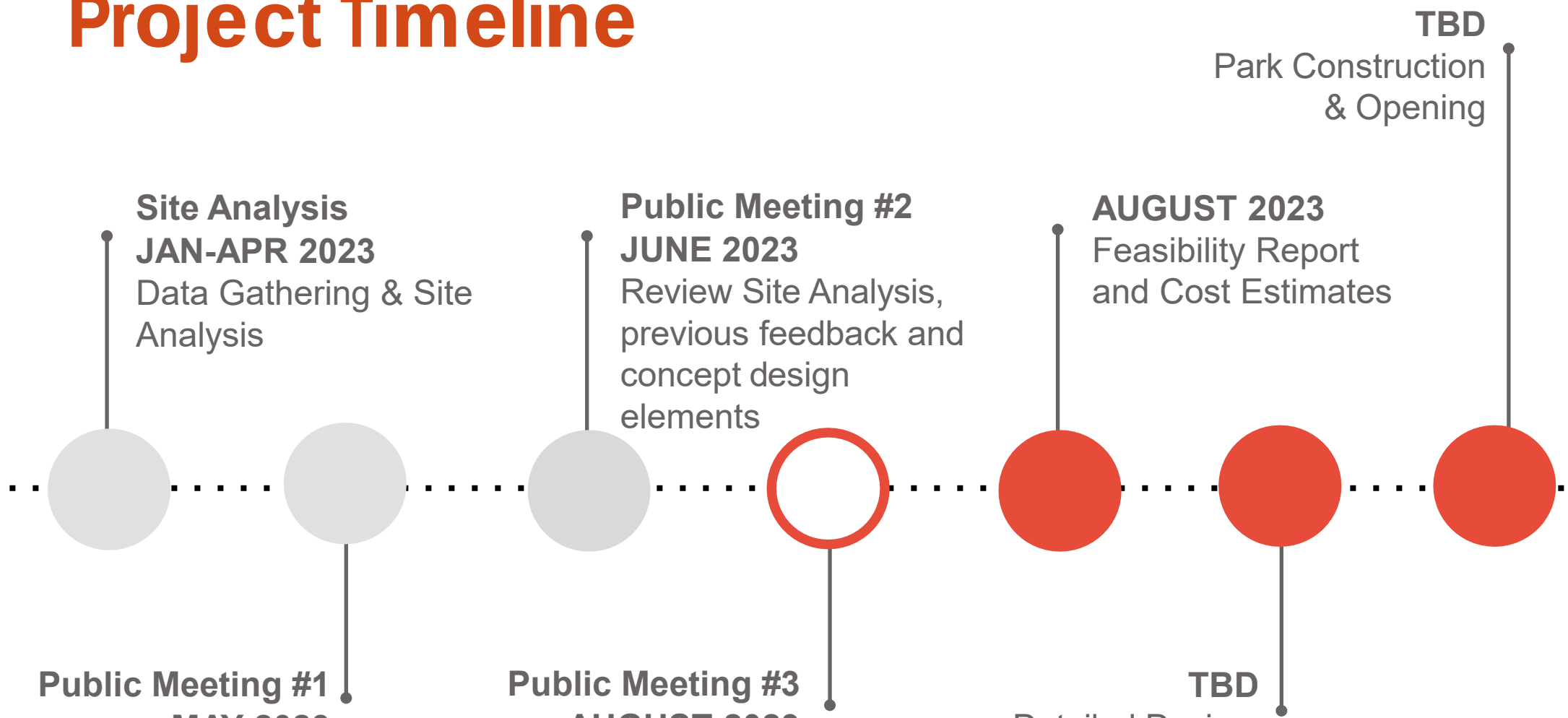
- For more information visit:

https://www.arlingtonma.gov/Home/Components/News/News/13341/2651?backlist=%2fdepartments%2fplanning-community-development

Cooke's Hollow – Feasibility Study Project Goals and Objectives

1. **Data Gathering:**
   - Evaluate existing conditions and site analysis data to identify potential opportunities for improvements with emphasis on ecological integrity and climate resilience.
2. **Community Feedback**
   - Engage community stakeholders to solicit feedback to inform design.
3. **Feasibility Study and Preliminary Design**
   - Use data and feedback to identify and propose conceptual design opportunities with a focus towards environmentally sustainable planning and engineering approaches.

Project Timeline



Public Meeting #1 – May Block Party

1. Reviewed existing conditions and site analysis data on site (ecological and cultural).
2. Open discussion to garner community feedback on existing conditions.

May Block Party Feedback

1. Historic significance needs to be factored into the design
   - Cpt. George Cooke built first water mill 1637.
   - Last of (9) dams once present in Arlington.
2. Valued meditative/contemplative space.
3. Sound of running water should be buffered/amplified.
4. A place to cool off in the summer (unique microclimate).
5. Place to eat lunch or take a break during the workday.
6. Frequented route for recreation walks/walking dogs.
7. Great location to spectate/enjoy various wildlife (including ducks, heron, jays, possums, river herring).

Public Meeting #2 – Goals and Objectives

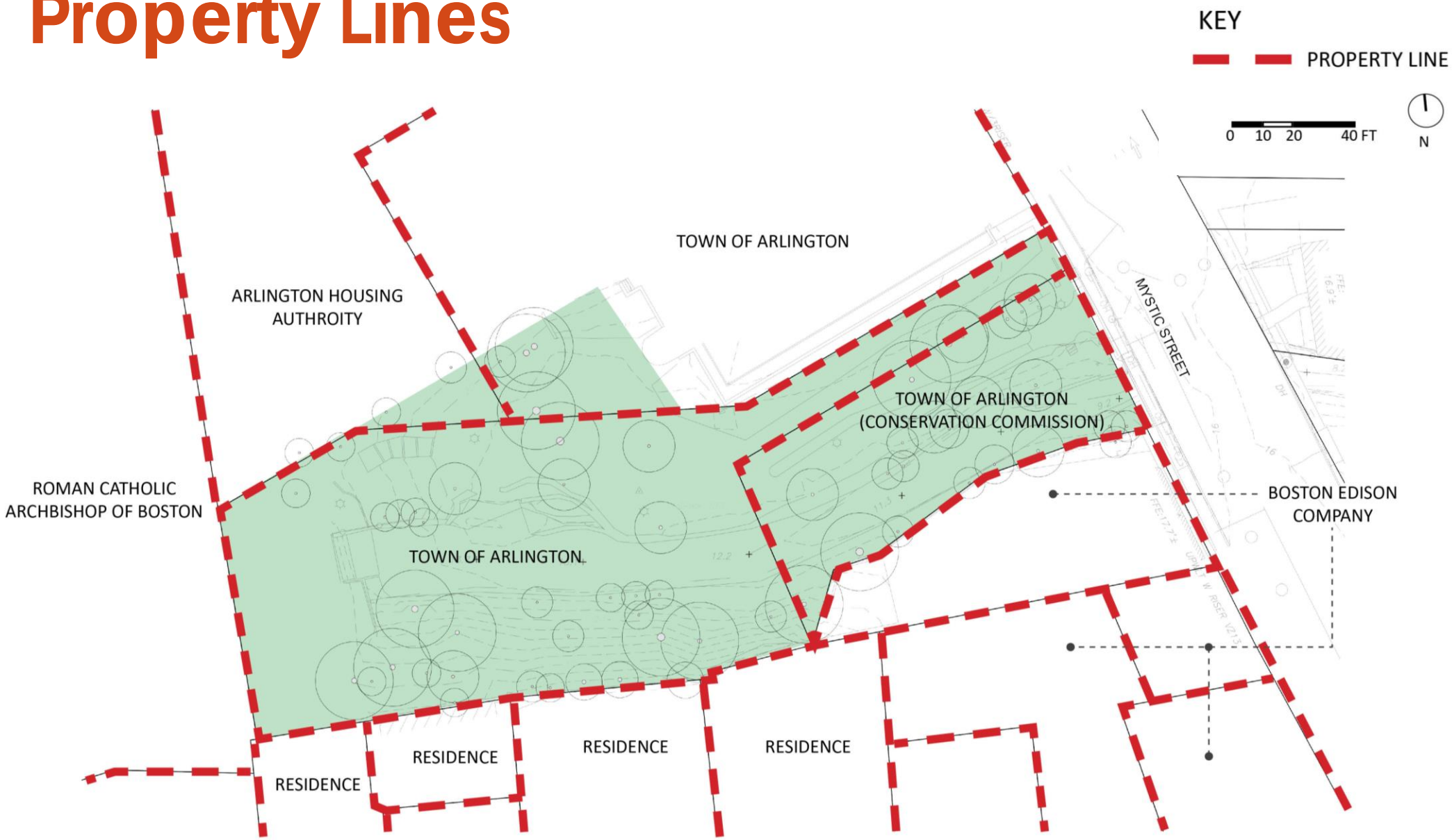
1. Reviewed existing conditions and site analysis data.
2. Reviewed preliminary design scope elements.
3. Open discussion to garner community feedback on preliminary concept design elements.

Public Meeting #3 – Preliminary Concept Design Alternatives

1. Briefly review challenging existing conditions site features and design implications.
2. Review (2) preliminary concept design alternatives.
3. Open discussion to garner community feedback on preliminary concept plans.

Project Location

Property Lines



Existing Conditions Plan

Review of Challenging Site Features

1. Narrow Pedestrian Corridor and Steep Slopes Regarding ADA Compliance.
2. Localized Flooding.
3. Steep North-facing Slope Aspect and Microclimate Conditions.
4. Dominant Invasive Tree Canopy.

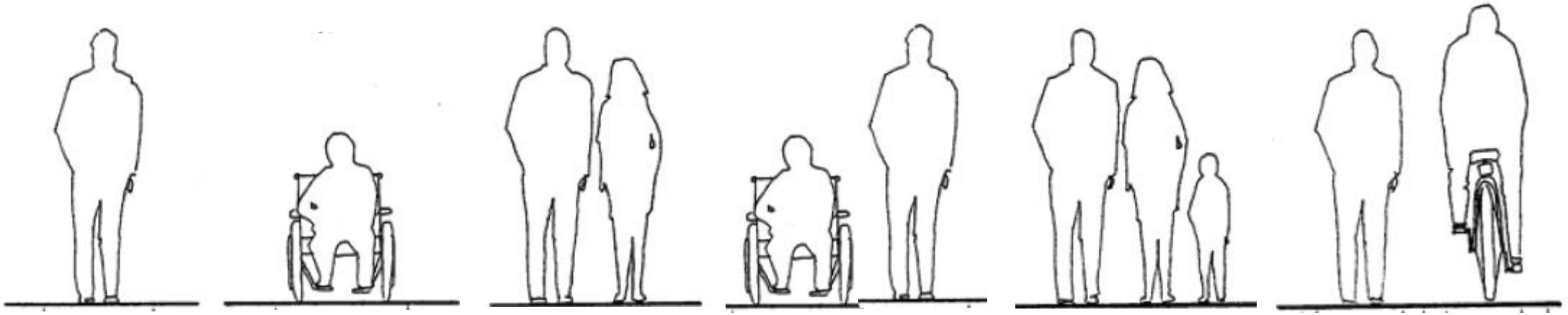
Accessibility and ADA Compliance

Americans with Disabilities Act Accessibility Standards (ADA)

- Maximum permitted slope of 5.0% and firm and stable surface material.
- Project objective to comply with ADA standards.

Design Approach

1. Aim to achieve pathway surface under 5% slope to top of falls.
2. If 5% slope not feasible, consider ramp system; **ramp system must have handrails.
3. Align pathways to limit impacts on the resource areas.
4. Pursue porous materials that are resilient to flooding and effects of climate change.



Pathway Surfacing Options

Porous Bituminous Concrete

1. **ADA-compliant**
2. **Cost: Low**
3. **Maintenance: Medium**
4. **Local Examples:**
   - Wellington Park
   - Perimeter Road, Fresh Pond Reservation, Cambridge

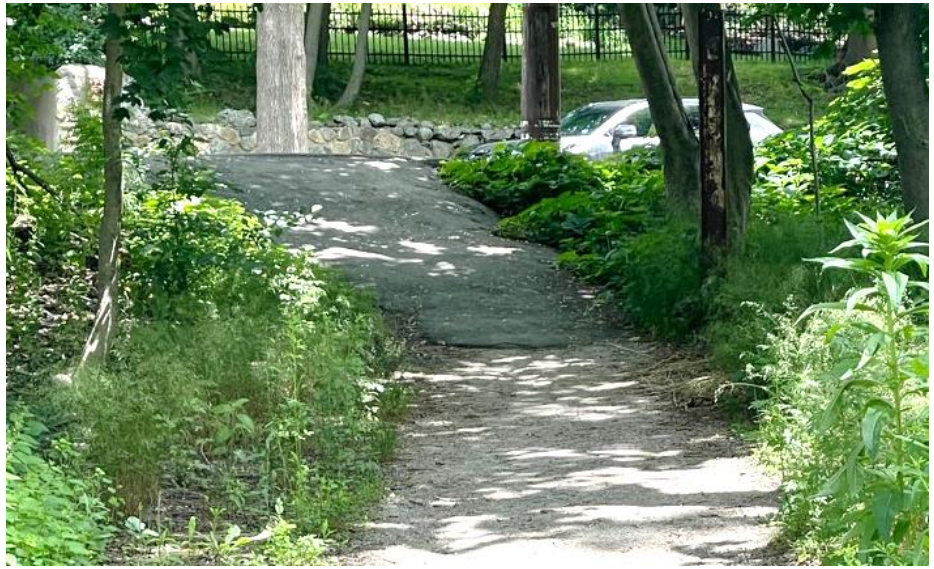
Timber Boardwalk

1. **ADA-compliant**
2. **Cost: High**
3. **Maintenance: Replacement**
4. **Local Examples:**
   - Wellington Park
   - Spy Pond Park, Arlington

Pathway Surfacing Options

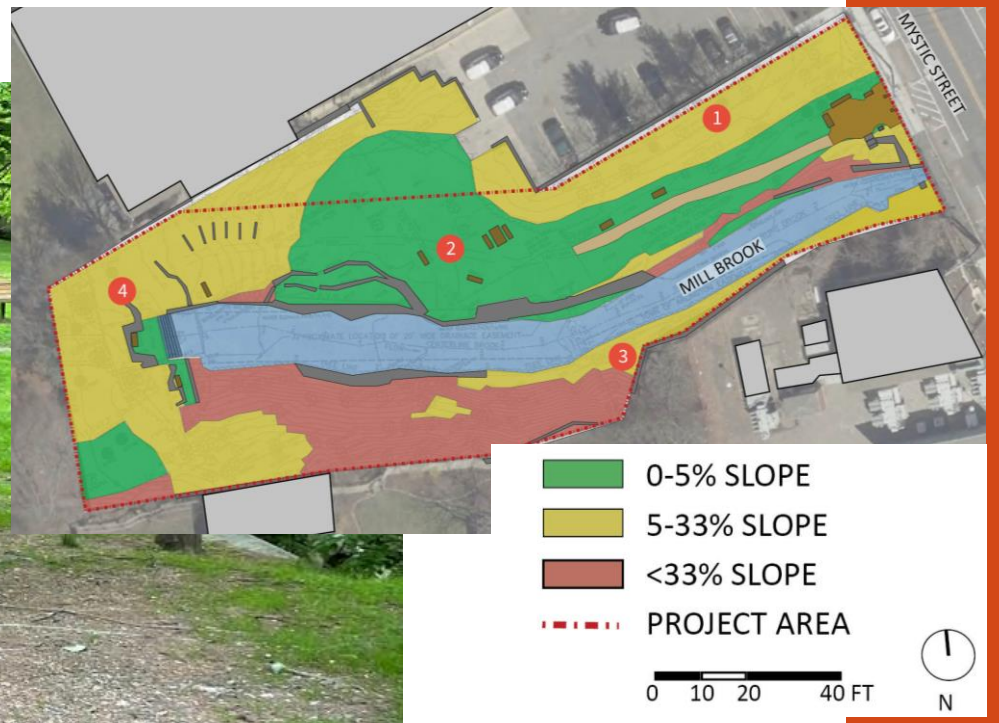
Stabilized Aggregate

1. **ADA-compliant**
2. **Cost: Medium**
3. **Maintenance: Medium**
4. **Local Examples:**
   - Arlington Reservoir
5. **Issues:**
   - Not a porous surface.
   - Performs poorly in areas:
     - Prone to flooding
     - Dense shade
     - Steeper slopes.



Localized Flooding - FEMA Flood Zones

Steep Slopes, Aspect and Microclimate



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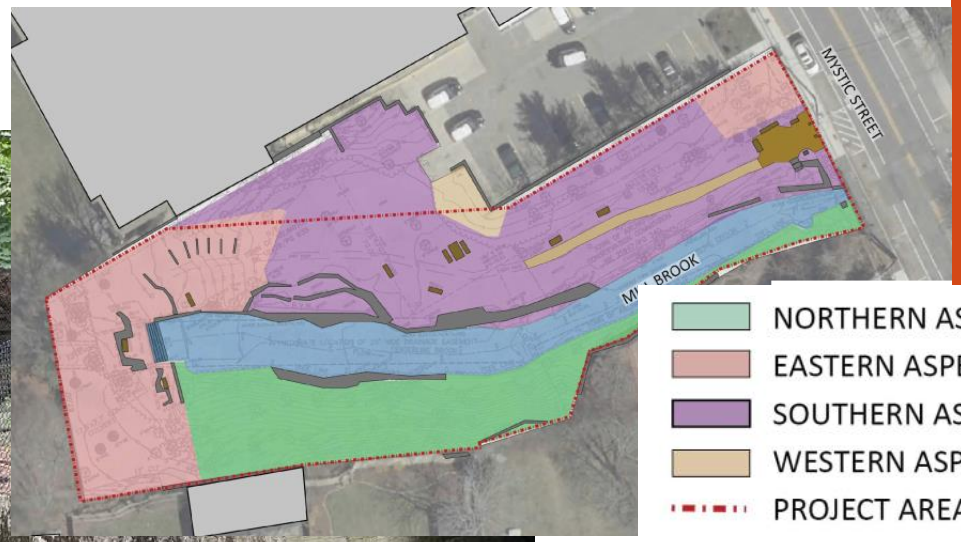
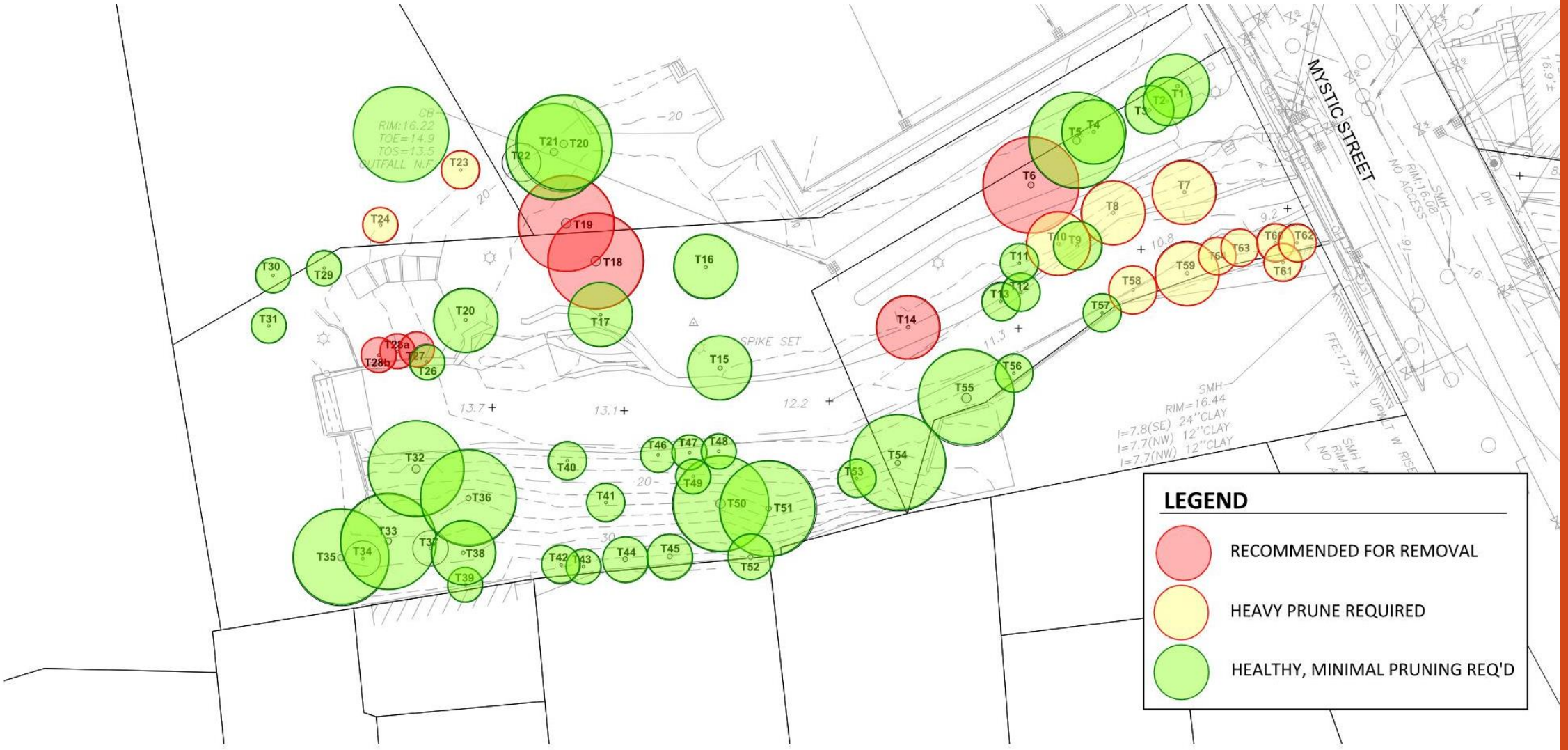


Tree Assessment - Dominant Invasive Canopy

1. Trees 6” and above were assessed (68 Total).
2. 7 Trees recommended for removal (Hazards).
3. 12 Trees require significant pruning to remove wisteria vine and hazardous leaders.
4. 38% of all trees (>6”) are state-listed invasive species.

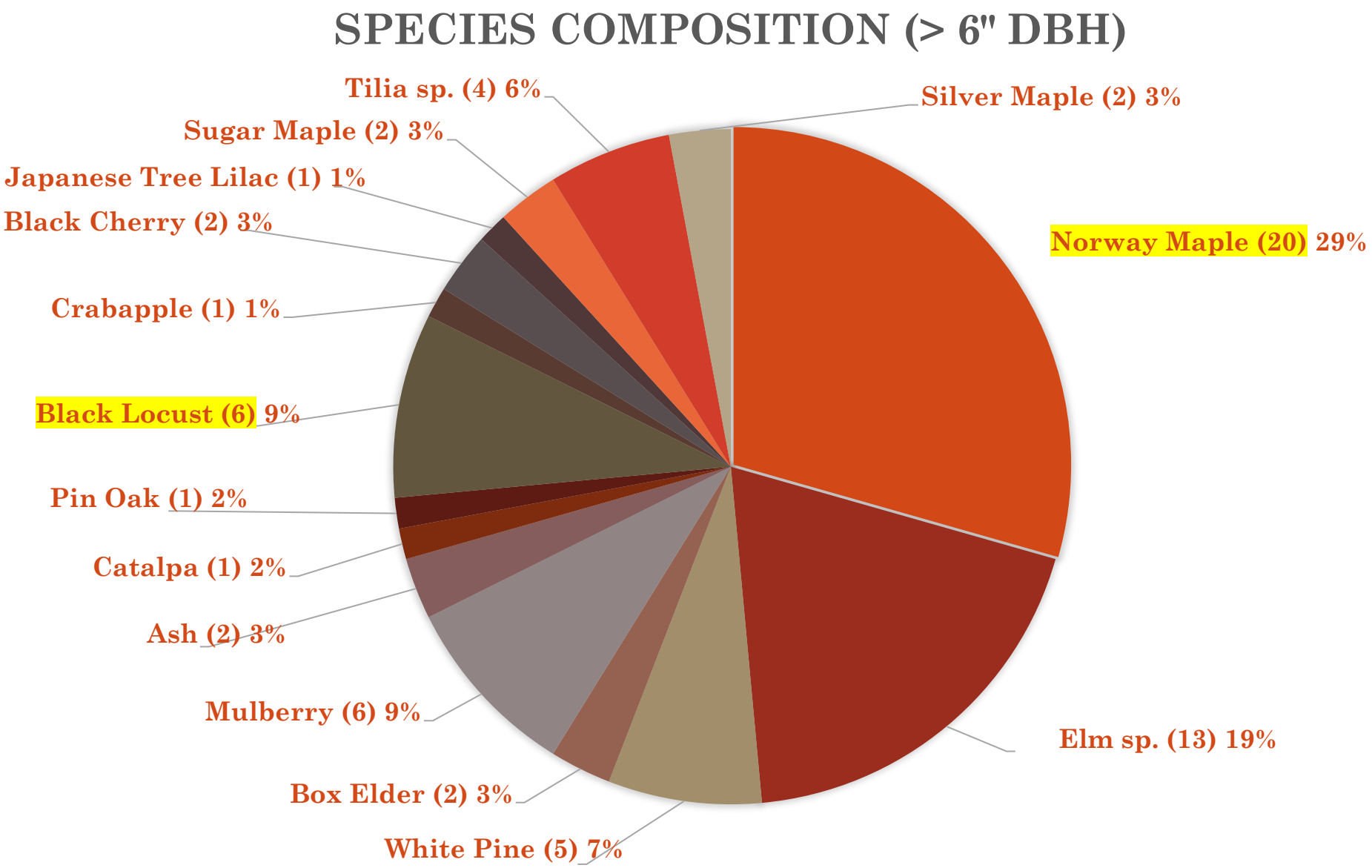
Tree Assessment Plan



COOKE'S HOLLOW

TREE ASSESSMENT KEY PLAN

Vegetation – Tree Statistics

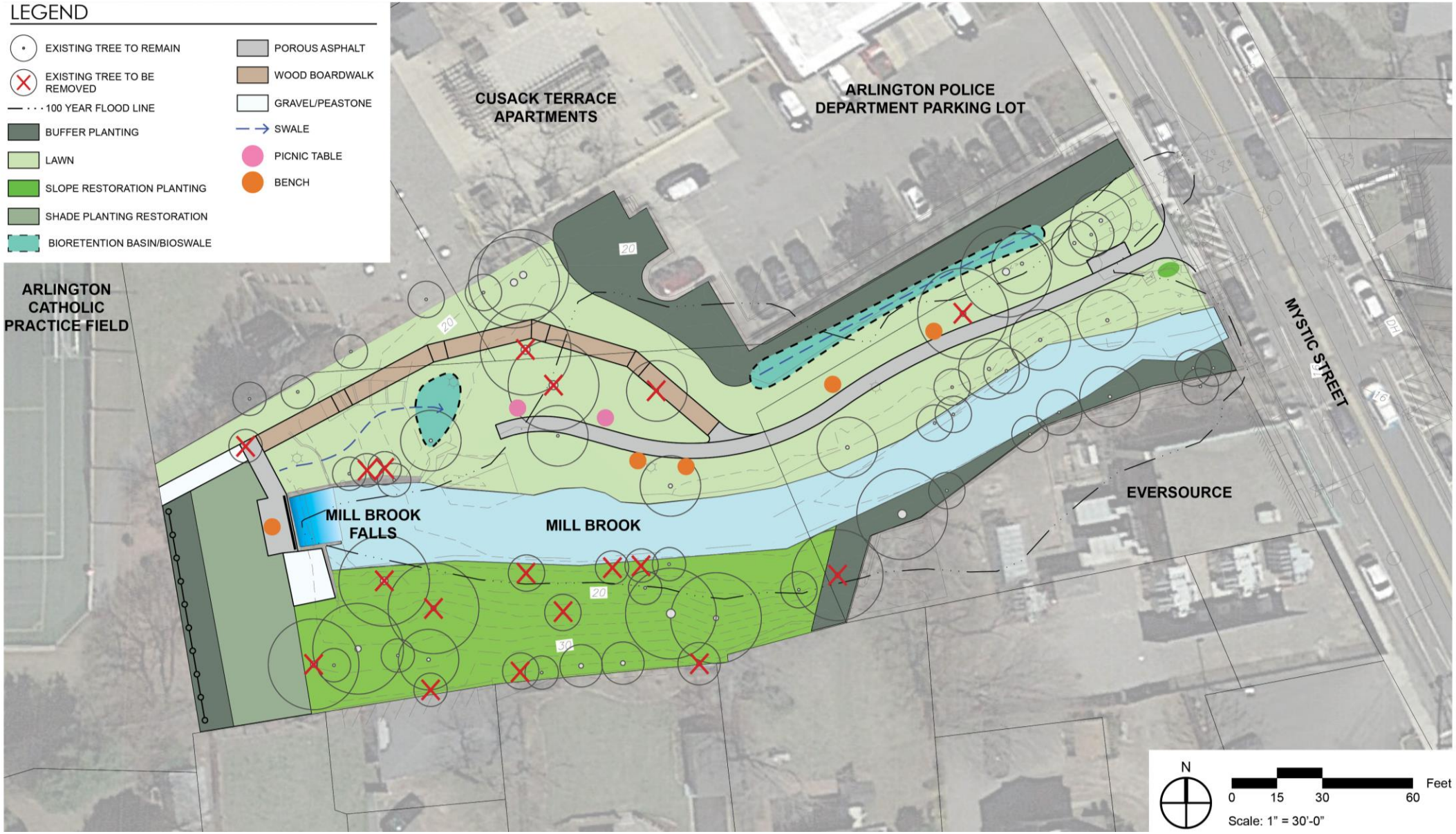


Review of Design Goals and Objectives

Based on site analysis data and community feedback:

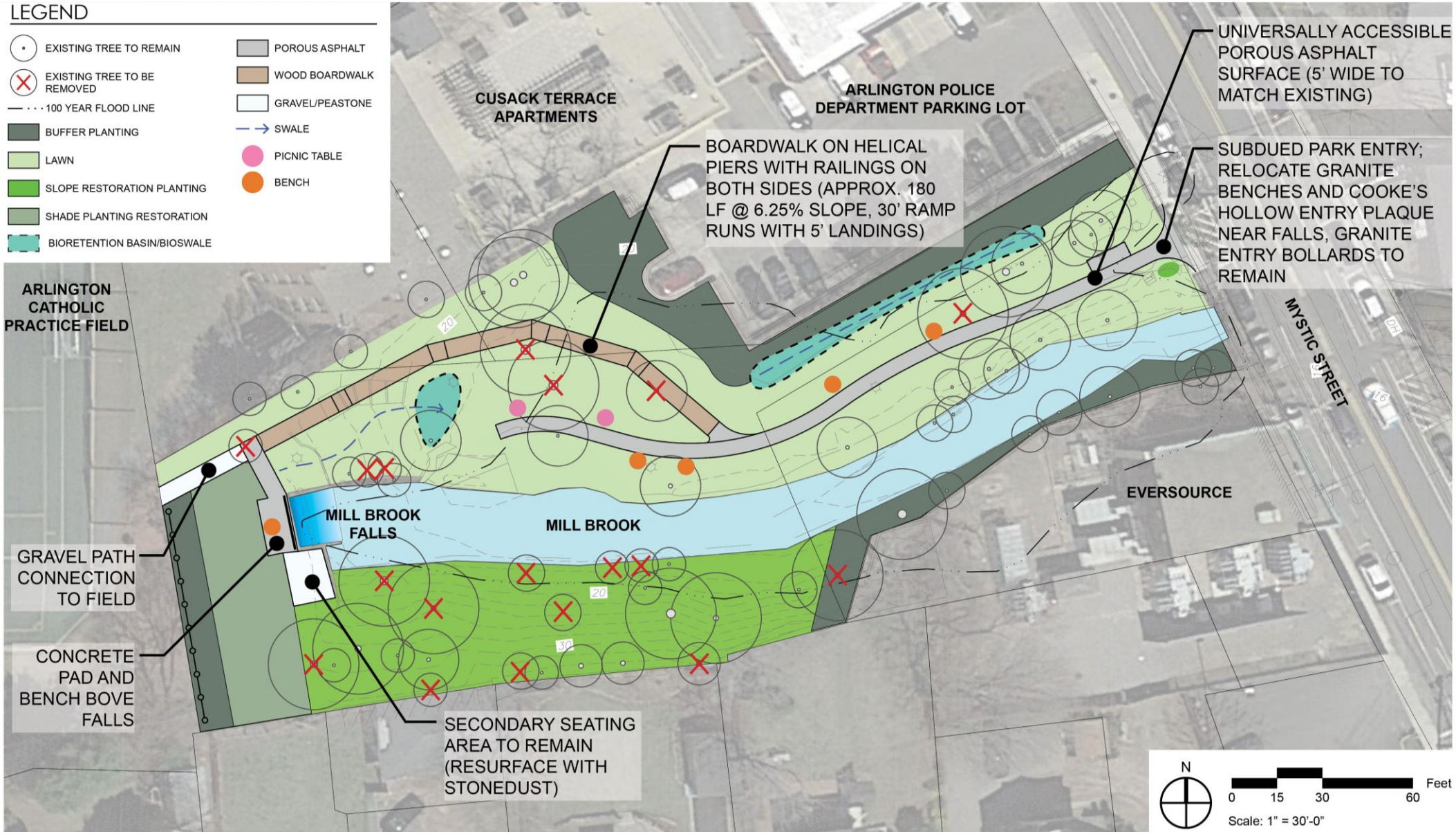
1. Improve park circulation and universal accessibility.
2. Enhance park aesthetic and maintain historic character.
3. Improve perimeter buffers and preserve natural feel/sense of place.
4. Unify aesthetic of site furnishings (signage, lighting, benches, etc.).
5. Address dominant invasive tree canopy.
6. Add native plantings and improve wildlife habitat.
7. Evaluate opportunities for green infrastructure and drainage improvements to mitigate the effects of flooding and climate change especially extreme heat.

Concept Alternative 1

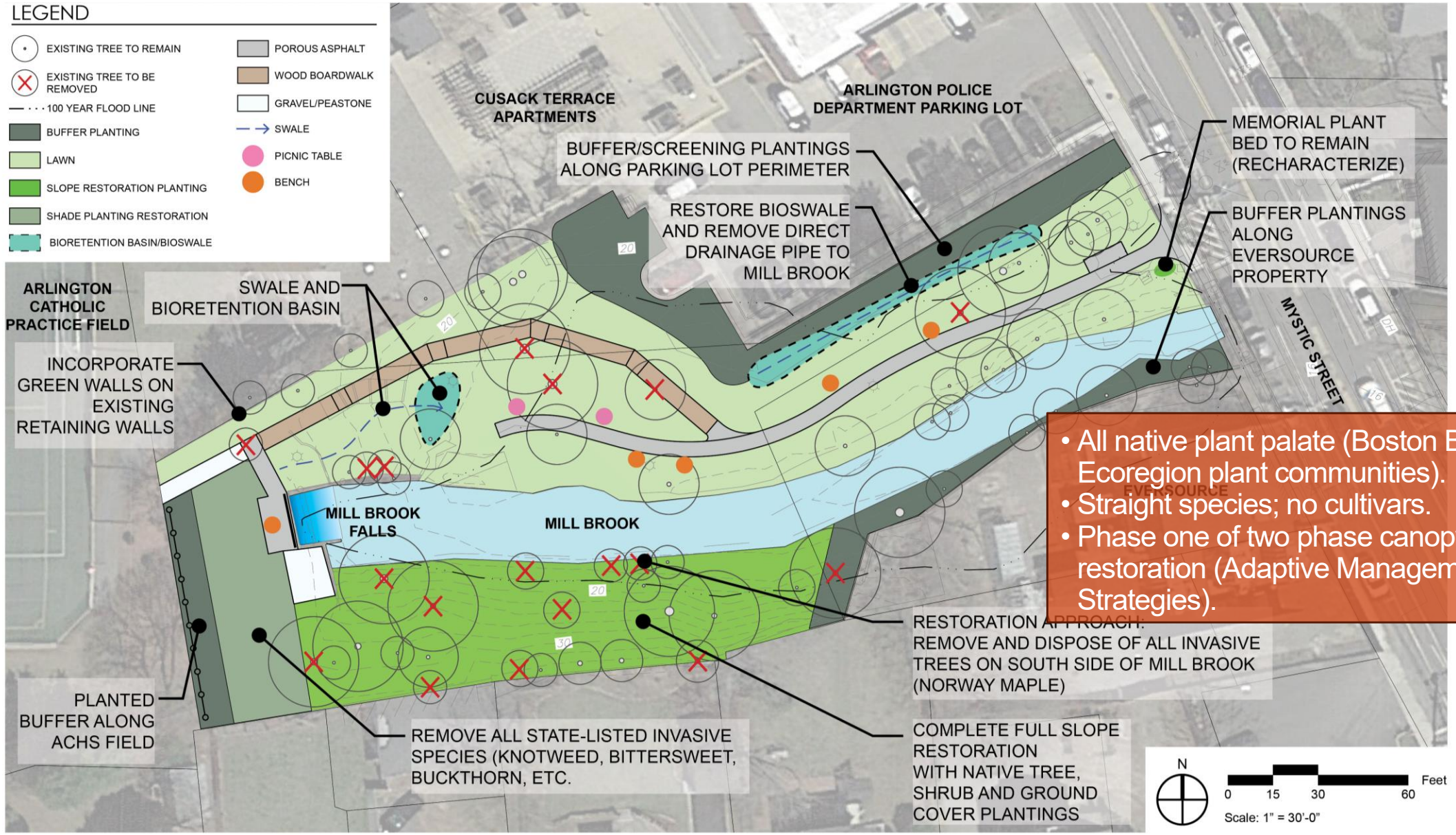


Concept Alternative 1

Surfacing and Accessibility



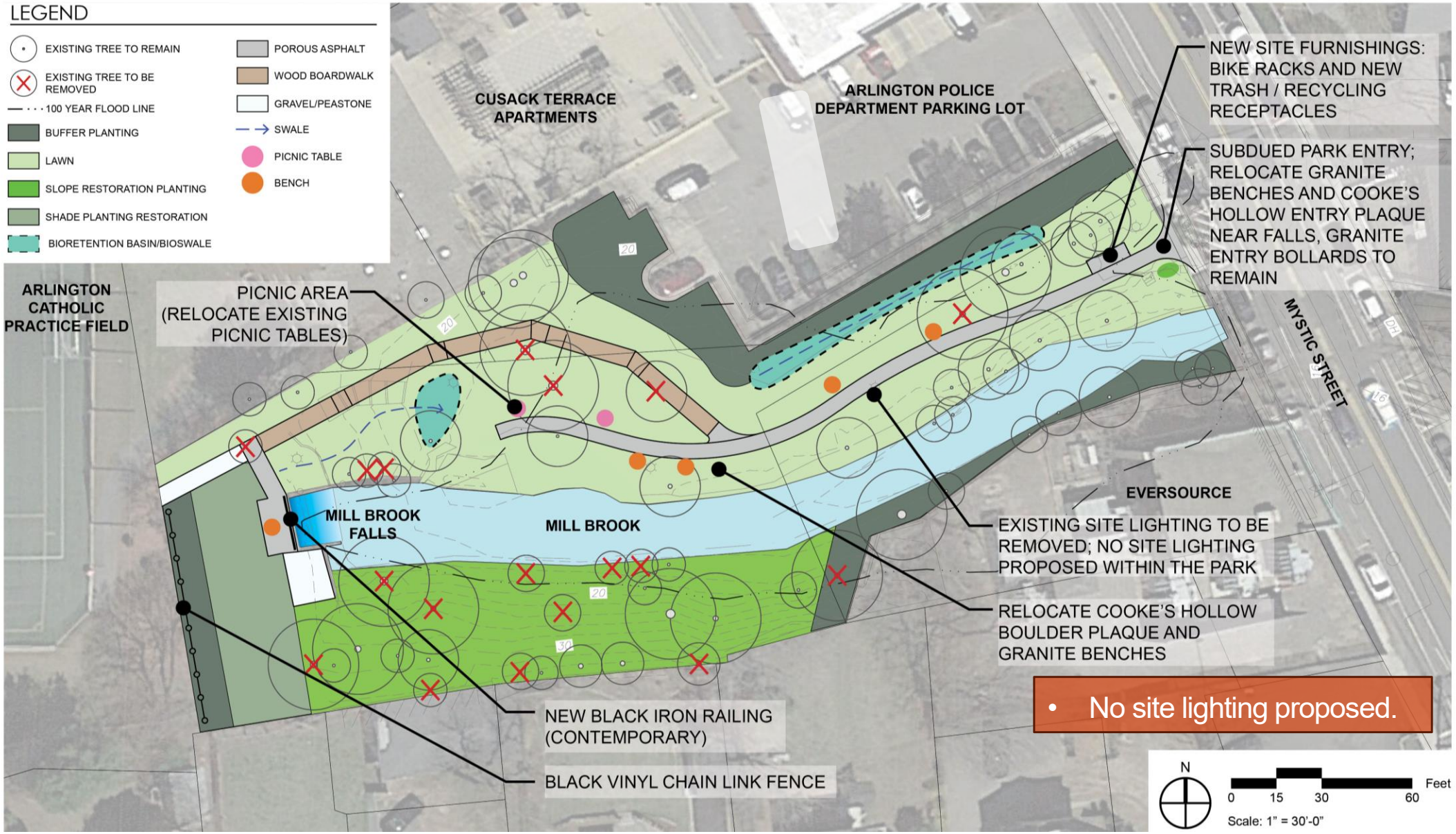
Concept Alternative 1 Planting, Invasive Management and G.I.



- All native plant palate (Boston Basin Ecoregion plant communities).
- Straight species; no cultivars.
- Phase one of two phase canopy restoration (Adaptive Management Strategies).

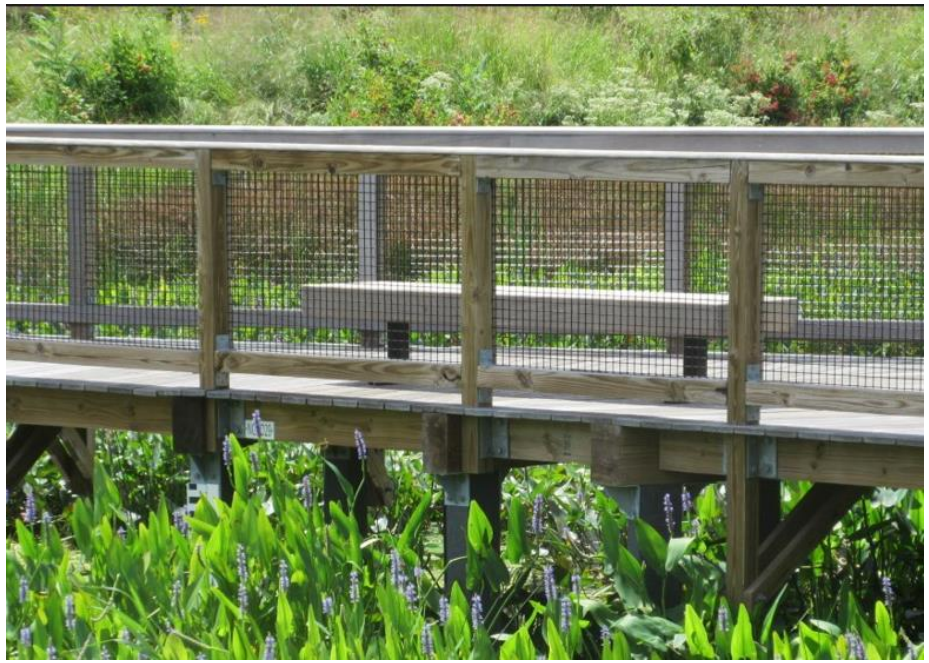
Concept Alternative 1

Site Furnishings



- No site lighting proposed.

Alternative 1 - Design Element Examples



Elevated Boardwalk
(Alewife Stormwater Wetland)

Elevated Boardwalk
(Wellington Park)

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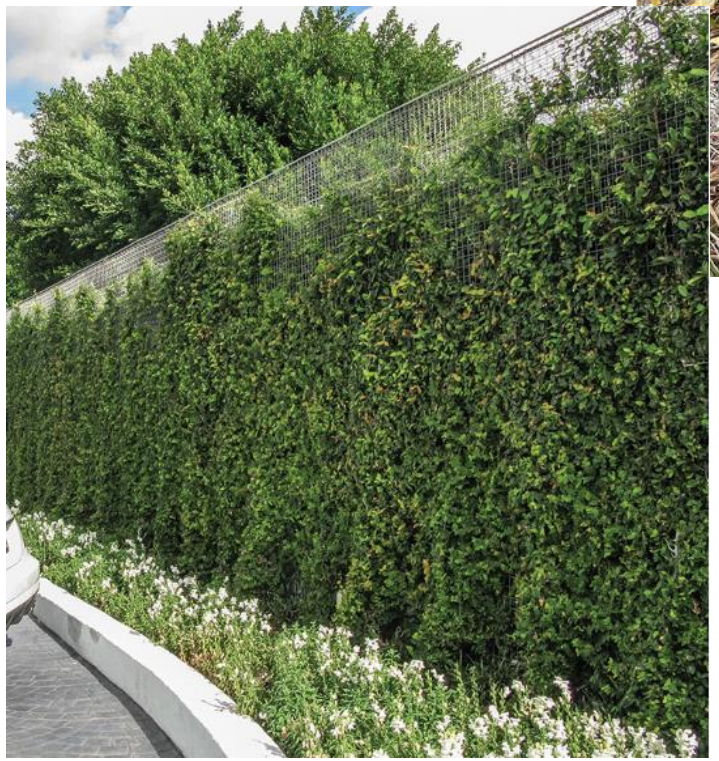

Green Screen

Relocate Plaque

Granite Interpretive Engraving

Alternative 1 - Design Element Examples

Steep Slope Restoration
(Fresh Pond Reservation, Cambridge)

Conveyance Swale and
Bioretention Basin (Spy Pond Park)

Alternative 1 - Design Element Examples

Steep Slope Restoration
(Glacken Slope at Fresh Pond Reservation)

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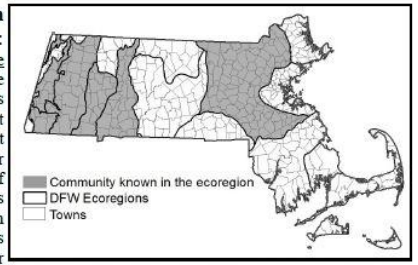

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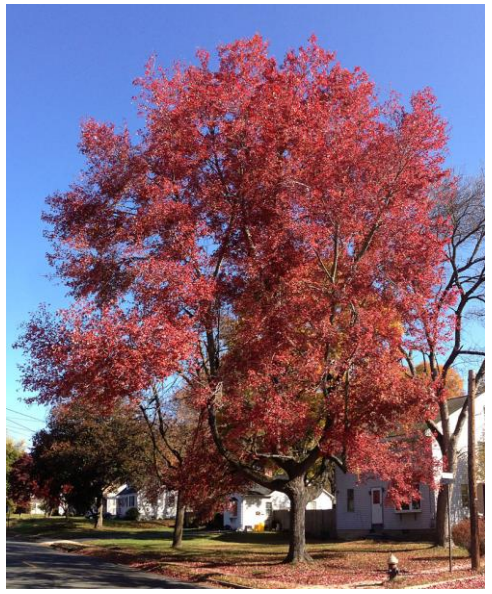
Natural Heritage & Endangered Species Program, Division of Fisheries & Wildlife, 1 Rabbit Hill Rd., Westborough, MA 01581

Updated: 2016
(508) 389-6360

Riparian Floodplain Community

Canopy Trees

1. *Acer rubrum* (red maple)
2. *Quercus bicolor* (swamp white oak)
3. *Betula nigra* (river birch)
4. *Ulmus americana* (American elm)



Riparian Floodplain Community

Shrubs and Groundcovers

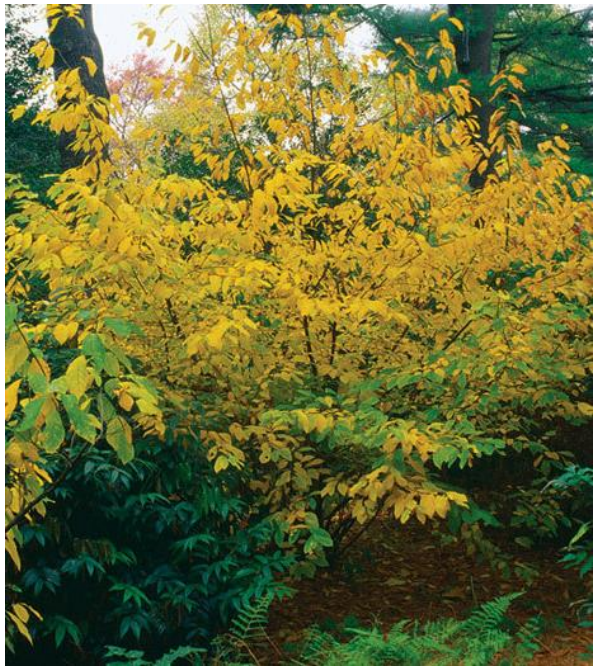
1. *Lindera benzoin* (spicebush)
2. *Cornus amomum* (silky dogwood)
3. *Ilex verticilata* (winterberry)
4. *Viburnum dentatum* (arrowwood)
5. *Spiraea alba* (meadowsweet)
6. *Clethra alnifolia* (summersweet)
7. *Onoclea sensibilis* (sensitive fern)

Slope Shrubs

1. mountain laurel
2. rhododendron
3. viburnum

Woodland Understory – Trees/Shrubs

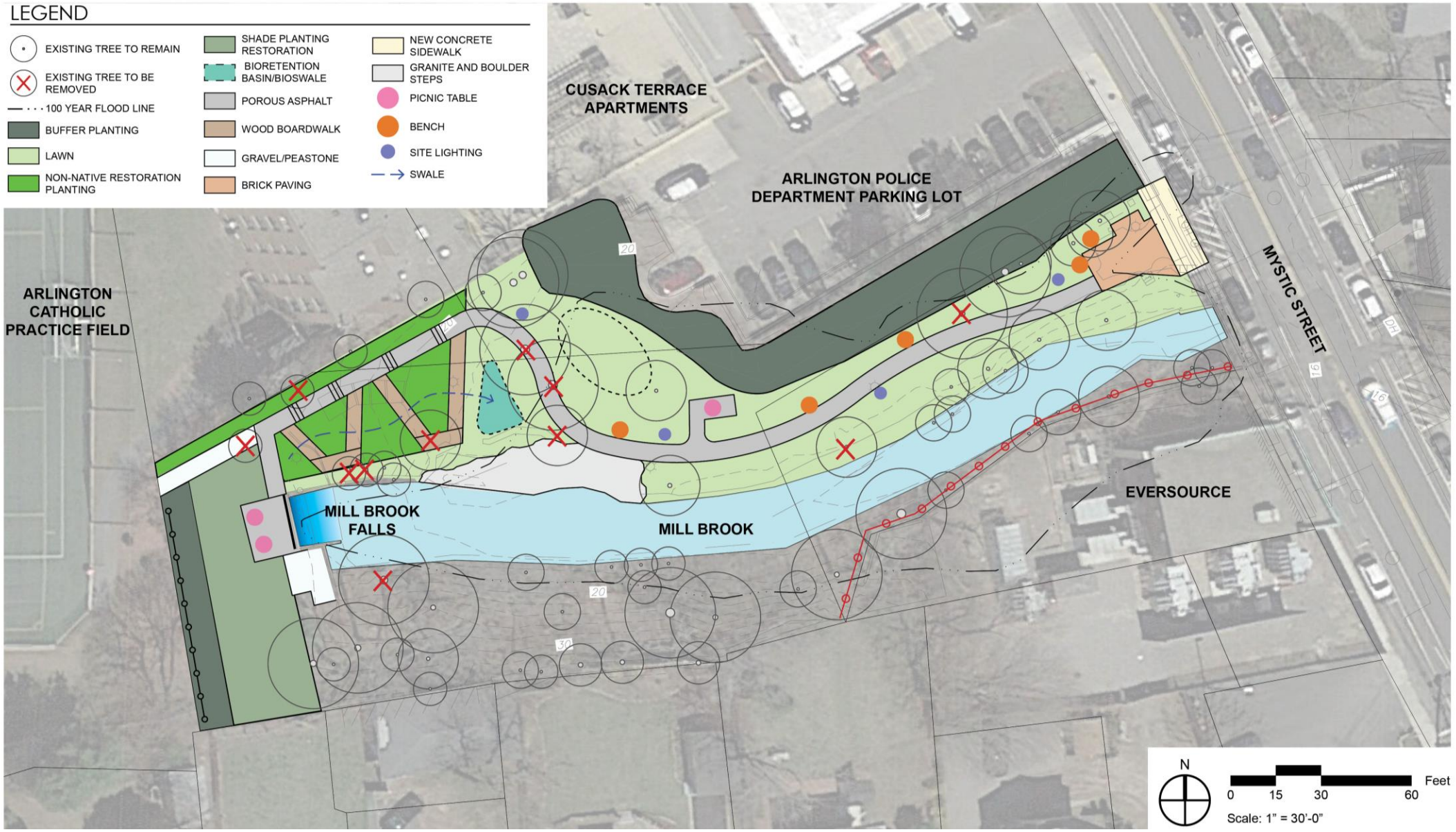
1. *Cornus florida* (flowering dogwood)
2. *Lindera benzoin* (spicebush)
3. *Cornus racemosa* (gray dogwood)
4. *Hamamelis virginiana* (witchhazel)
5. *Ostrya virginiana* (Hop-hornbeam)
6. *Carpinus caroliniana* (Ironwood)



Woodland Understory - Groundcovers

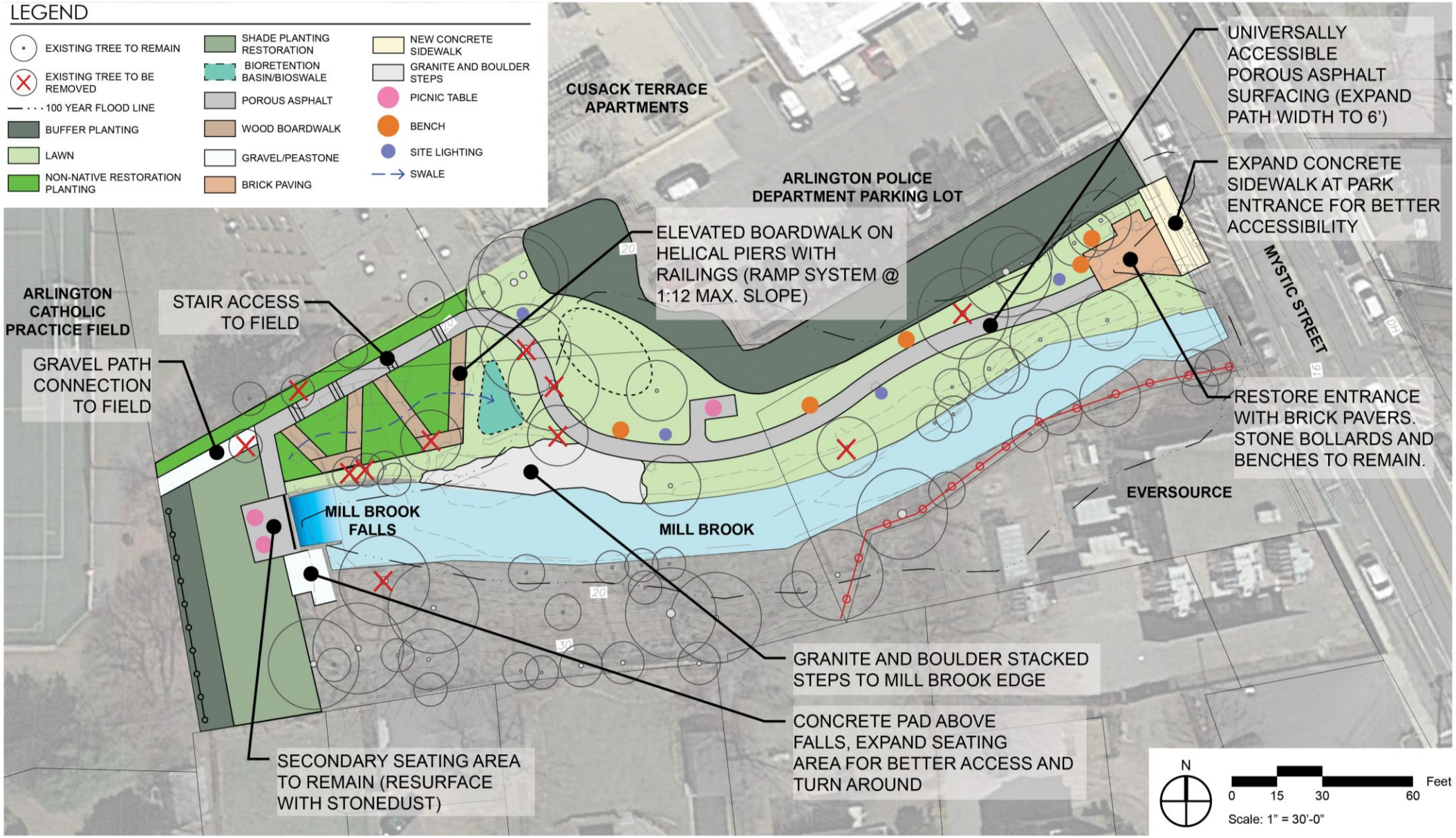
1. **Carex pennsylvanica** (Pennsylvania sedge)
2. *Tiarella cordifolia* (foamflower)
3. *Asarum canadensis* (Canadian wild ginger)
4. **Eurybia divaricata** (white wood aster)
5. *Dryopteris marginalis* (marginal woodfern)
6. *Pteridium aquilinum* (bracken fern)

Concept Alternative 2

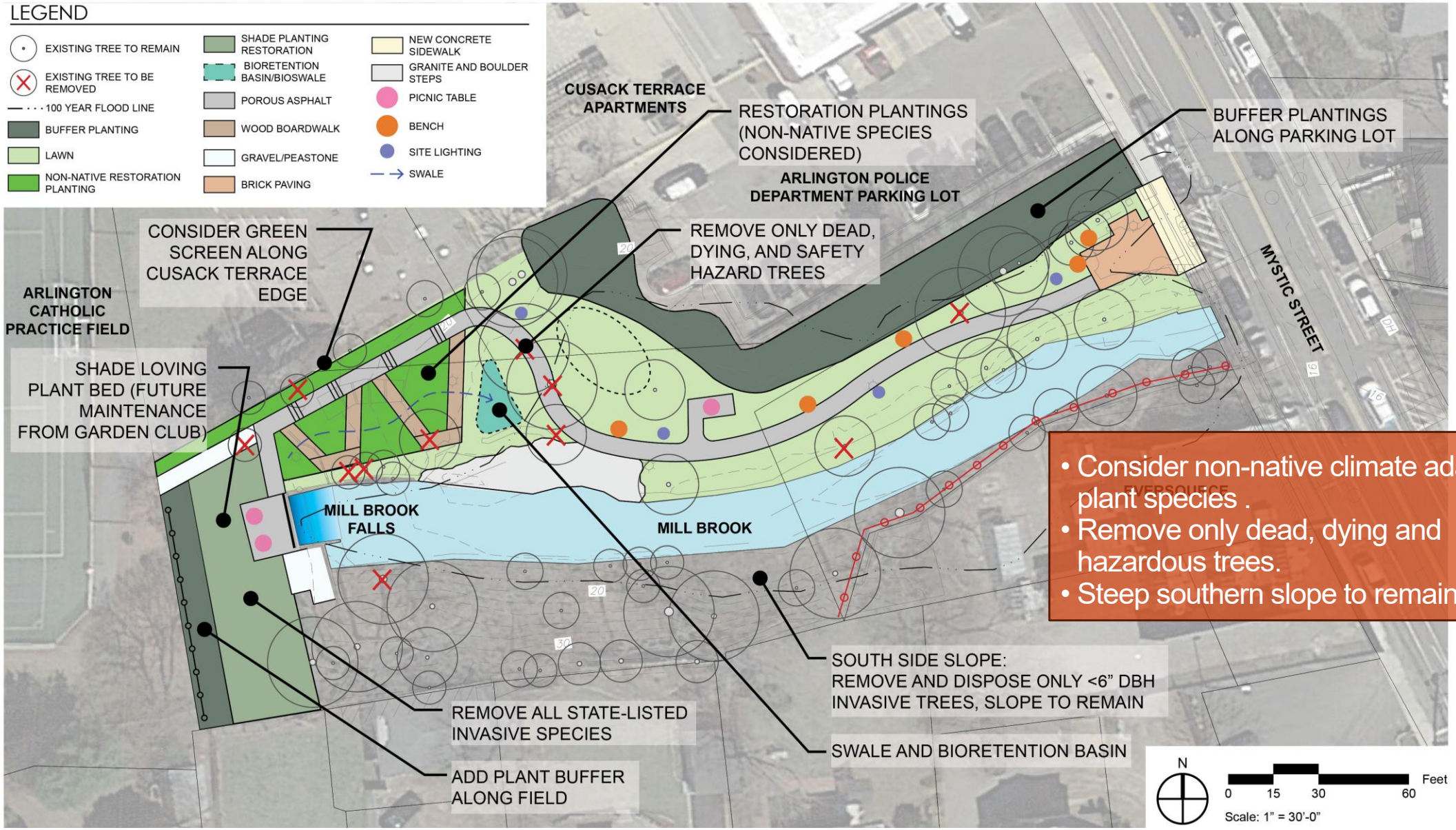


Concept Alternative 2

Surfacing and Accessibility



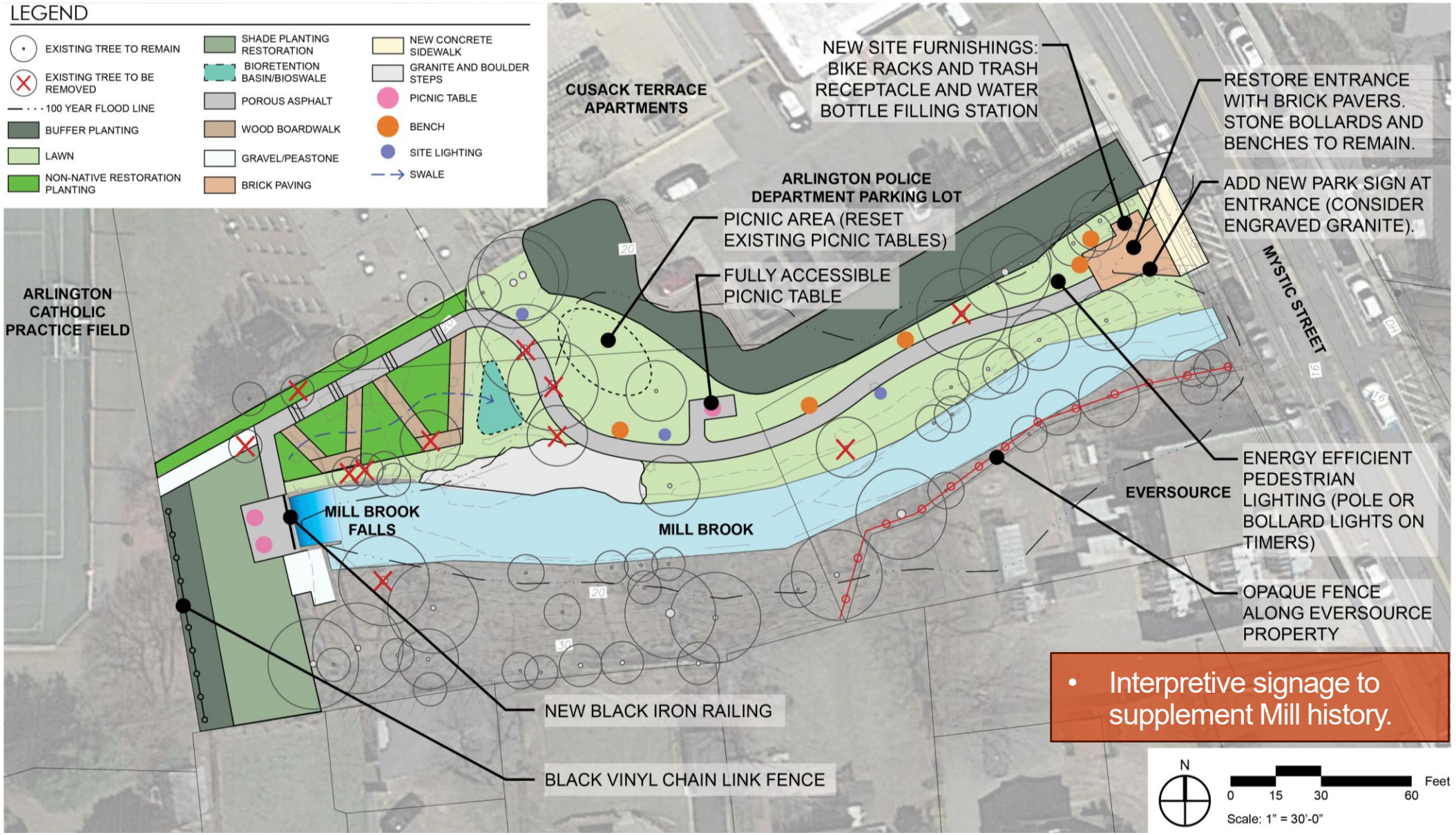
Concept Alternative 2 Planting, Invasive Management and G.I.



- Consider non-native climate adaptive plant species .
- Remove only dead, dying and hazardous trees.
- Steep southern slope to remain as is.

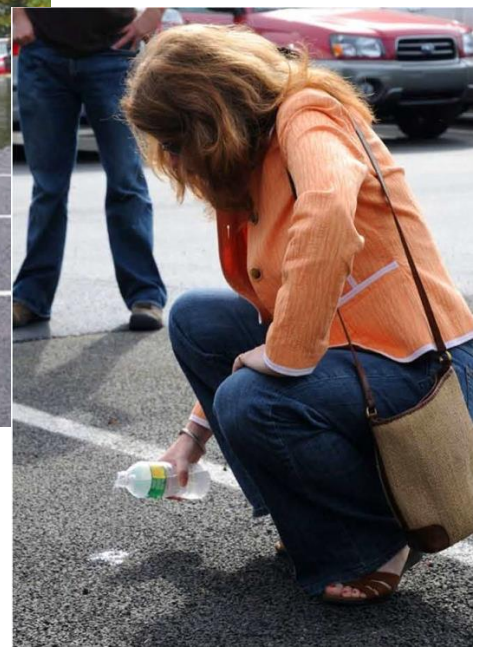
Concept Alternative 2

Site Furnishings



- Interpretive signage to supplement Mill history.

Alternative 2 - Design Element Examples



Porous Asphalt

Permeable Pavers

Granite Block and Boulder Water Access (Watertown Riverfront Park)

Alternative 2 - Design Element Examples

Accessible
Picnic Table

Wood Bench

Hydration Station
Bottle Filler

Alternative 2 - Design Element Examples

Black Iron Railing

LED Bollard

Interpretive Signage

Next Steps

1. Submit Final Feasibility and Preliminary Design Report (Site Analysis, Concept Alternatives and Cost Estimates) August 2023
2. Permitting and Construction Documents – TBD
3. Park Construction - TBD

Thank You! Please provide feedback

- **Town of Arlington Contact:**

dmorgan@town.arlington.ma.us

- **For more information visit:**

https://www.arlingtonma.gov/Home/Components/News/News/13341/2651?backlist=%2fdepartments%2fplanning-community-development